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*Evening Division  
Bulletin*

1966-1967



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*NEW HAVEN  
COLLEGE*

**EVENING CREDIT AND  
EXTENSION DIVISION  
BULLETIN**

**1966-1967**

# Evening Credit Division Calendar

## SUMMER SESSION 1966

|                                |                   |           |
|--------------------------------|-------------------|-----------|
| Registration period            | Tuesday-Wednesday | June 7-8  |
| Tuition due on or before       | Wednesday         | June 8    |
| First Term classes begin       | Wednesday         | June 15   |
| Holiday (Independence Day)     | Monday            | July 4    |
| First Term final examinations  | Friday            | July 22   |
| Second Term classes begin      | Monday            | July 25   |
| Second Term final examinations | Monday            | August 29 |

## FALL SEMESTER 1966

|                                              |                    |                       |
|----------------------------------------------|--------------------|-----------------------|
| Registration for current and former students | Monday-Friday      | August 22-September 2 |
| Holiday (Labor Day)                          | Monday             | September 5           |
| Registration for new students                | Wednesday-Thursday | September 7-8         |
| Tuition due on or before                     | Friday             | September 9           |
| Classes begin                                | Thursday           | September 15          |
| Holiday (Thanksgiving)                       | Thursday-Friday    | November 24-25        |
| Christmas recess                             | Saturday-Sunday    | December 17-January 1 |

1967

|                         |                 |               |
|-------------------------|-----------------|---------------|
| Classes resume          | Monday          | January 2     |
| Last evening of classes | Friday          | January 13    |
| Final examinations      | Monday-Friday   | January 16-20 |
| Recess                  | Saturday-Sunday | January 21-29 |

## SPRING SEMESTER 1967

|                                              |                   |               |
|----------------------------------------------|-------------------|---------------|
| Registration for current and former students | Monday-Friday     | January 2-13  |
| Registration for new students                | Tuesday-Wednesday | January 24-25 |
| Tuition due on or before                     | Wednesday         | January 25    |
| Classes begin                                | Monday            | January 30    |
| Spring recess                                | Saturday-Sunday   | March 18-26   |
| Classes resume                               | Monday            | March 27      |
| Last evening of classes                      | Friday            | May 19        |
| Final examinations                           | Monday-Friday     | May 22-26     |
| Commencement                                 | Sunday            | June 18       |

## SUMMER SESSION 1967

|                                |                   |           |
|--------------------------------|-------------------|-----------|
| Registration period            | Tuesday-Wednesday | June 6-7  |
| Tuition due on or before       | Wednesday         | June 7    |
| Classes begin                  | Wednesday         | June 14   |
| Holiday (Independence Day)     | Tuesday           | July 4    |
| First Term final examinations  | Friday            | July 21   |
| Second Term classes begin      | Monday            | July 24   |
| Second Term final examinations | Monday            | August 28 |

\* Placement examinations are given at regular intervals. A schedule is available.

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## THE BOARD OF GOVERNORS

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| <p>ROLAND M. BIXLER, <i>Chairman</i><br/>President, J-B-T Instruments, Inc.</p> <p>STUART W. FINLAY, <i>Vice Chairman</i><br/>Shearson, Hammill &amp; Co.</p> <p>BULKELEY SMITH, <i>Secretary</i><br/>Formerly, President, Manufacturers<br/>Division, New Haven Chamber of<br/>Commerce</p> <p>FREDERICK F. FISCHER, <i>Treasurer</i><br/>Certified Public Accountant</p> <p>HUBERT C. HODGE, <i>Assistant Secretary</i><br/>President, American Buckle Co.</p> <p>JAMES Q. BENSEN<br/>Resident Manager, Bethlehem Steel Co.</p> <p>NORMAN I. BOTWINIK<br/>President, Botwinik Brothers, Inc.</p> <p>RICHARD H. BOWERMAN<br/>Partner, Gumbart, Corbin, Tyler &amp; Cooper</p> <p>MILTON P. BRADLEY<br/>Formerly, Senior Vice President<br/>The First New Haven National Bank</p> <p>MRS. KINGMAN BREWSTER, JR.</p> <p>CHARLES D. BROWN<br/>President, MB Electronics—Division of<br/>Textron Electronics, Inc.</p> <p>WILLIAM G. CLEAVER<br/>Formerly, Senior Vice President<br/>The First New Haven National Bank</p> <p>PETER H. COMSTOCK<br/>President, Pratt, Read &amp; Co.</p> <p>WILLIAM J. COOPER<br/>Chairman of the Board and Chief<br/>Executive Officer, The United<br/>Illuminating Co.</p> <p>JOHN E. ECHLIN<br/>Chairman of the Board<br/>The Echlin Manufacturing Co.</p> | <p>JOHN F. FORSELIUS<br/>Alumni Representative</p> <p>HARLEY J. HISCOCK<br/>President, The Fuller Merriam Co.</p> <p>RICHARD C. MACONI<br/>President, Maconi Construction Co.</p> <p>HOWARD W. MASCHMEIER<br/>General Manager, WNHC-TV</p> <p>ELLIS C. MAXCY<br/>President, The Southern New England<br/>Telephone Co.</p> <p>ROBERT I. METCALF<br/>Vice President—Public Affairs<br/>Olin Mathieson Chemical Corp.</p> <p>JOHN PERRY MILLER<br/>Dean of the Graduate School<br/>Yale University</p> <p>GEORGE I. MORDECAI<br/>President of the Alumni Association</p> <p>MARVIN K. PETERSON<br/>President of the College</p> <p>BRUCE F. POWRIE<br/>Industrial Management Club Representative</p> <p>ANSELM TALALAY<br/>General Manager, B. F. Goodrich<br/>Sponge Products Division</p> <p>MRS. F. MORGAN TAYLOR, JR.</p> <p>GEORGE R. TIERNAN<br/>State's Attorney<br/>New Haven County</p> <p>PORTER H. TURNER<br/>General Secretary, The YMCA of<br/>New Haven</p> <p>FELIX ZWEIG<br/>Dean of the School of Engineering<br/>Yale University</p> |
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## ADMINISTRATION

- |                                           |                                                 |
|-------------------------------------------|-------------------------------------------------|
| MARVIN K. PETERSON, B.S. in Econ., M. Ed. | President                                       |
| ALLEN C. HUTCHINSON, A.B., M.A., Ph.D.    | Vice President                                  |
| STEPHEN J. BENNETT, B.S., A.M.            | Dean of Faculty                                 |
| GEORGE A. SCHAEFER, B.S., M.B.A.          | Director, Evening and Extension Credit Programs |

## History of the College

New Haven College, originally an evening college only, was founded by the YMCA of New Haven in 1920 as a branch of Northeastern University. As an independent, coeducational college, it has sought at all times to serve the community.

By act of the Connecticut General Assembly, the College was incorporated in 1926 and was authorized to grant the Associate in Science degree. At the same time, it negotiated an agreement with Yale University for the use of classrooms and laboratories for the operation of an evening college.

During the years which followed, the College, in cooperation with local business and industries, developed and conducted a systematic educational program.

From 1941 to 1945, the College administered the official Yale University Engineering, Science, Management War Training Program for New Haven County. Accreditation by the New England Association of Colleges and Secondary Schools in 1948 marked another significant step forward.

The next decade saw the inauguration of the Division of Special Studies, the School of Executive Development, and the Reading Center. During this period two daytime programs for recent high school graduates were also begun: the Cooperative Plan, in which students alternate terms of work and study, and the Engineering Program. Since 1958 the College has been authorized by the Connecticut General Assembly to offer courses of study leading to the Bachelor of Science degree to both day and evening students.

The acquisition of the present campus in 1960 provided the opportunity for the College to expand its offerings for full-time students and to develop further its other credit and non-credit curricula. The first major addition was the Arts & Science Program in the Day Division.

In March, 1962, the College acquired 28 acres of undeveloped land three blocks north of the present campus for planned future use.

Service to the individual student, whether of the usual college age or older, and to business, industry, and institutions of the New Haven area is the primary function of New Haven College. This philosophy will be the controlling factor in all the plans for the future.

## Divisions of the College

New Haven College has four divisions, each of which serves a special function. They are: The Credit Programs, Daytime, Evening and Extension; The Division of Special Studies; The School of Executive Development; The Reading Center. All divisions of the College are co-educational.

### The Credit Programs

**Day**—The degree-granting Day Division offers curricula which lead to the two-year Associate degree and the four-year Bachelor degree. An Associate in Science degree may be obtained in Business Administration, Engineering, Chemistry, Physics, Mathematics or Arts and Science, with majors in General Studies, Commercial and Advertising Art, and Journalism and Public Relations.

Students pursuing a course of studies leading to a Bachelor of Science degree in Business Administration may elect a major in: Accounting; General Business Administration; Industrial Administration with either a general or a computer option; Marketing; or Public and Social Administration.

Students pursuing a course of studies leading to a Bachelor of Science degree in Engineering may elect to take their degrees in Electrical Engineering, Industrial Engineering or Mechanical Engineering.

**Evening**—The degree-granting Evening Division offers curricula which lead to an Associate in Science or a Bachelor of Science degree.

An Associate in Science degree is offered in the following areas: General Studies; Business Administration; and Engineering with majors in General, Electrical, Industrial, Mechanical or Metallurgical Engineering.

A Bachelor of Science degree is offered in the following areas: Business Administration with majors in Accounting, Business Administration, Industrial Administration (General or Computer option), Marketing or Public and Social Administration; Electrical Engineering; Industrial Engineering; Mechanical Engineering.

### Extension Programs

A particular function of the community college is to organize and develop programs of study which will serve the more specific needs of area industries and organizations. New Haven College has undertaken these programs as the need was recognized. They may take the form of off-campus extension programs with classes being held in training classrooms of specific companies or at the Engineering Extension Division at Groton, Connecticut, or the work may be done on the College campus. Current program offerings include:

**The Police Science and Administration Curriculum**—This is an Associate Degree program for law enforcement officers throughout Connecticut. Upon receiving the Associate Degree in Police Science and Administration, the student may continue his work toward the Bachelor of Science degree in Business Administration with the Public and Social Administration major.

The program is conducted by New Haven College to prepare students to be proficient and competent in the many aspects of police work. It offers professional and cultural courses at the college level for those who are interested in training and upgrading preparation for careers in private or public law enforcement. The program was initiated in 1960 with the cooperation of the New York Police Academy, the New Haven Police Academy, Yale University and the New Haven Foundation.

**Groton Extension Division**—This Engineering Program leads to a Bachelor of Science Degree in Engineering. While it is general in nature, through the careful selection of restricted technical electives, certain areas such as metallurgy or mechanical processes, design or electrical, are included. The majority of courses are taught in the New London area, but it is recognized that certain laboratory courses must be taught on campus at New Haven College or Yale University. Matriculation into this program presumes the completion of the first two years of an engineering program or its equivalent.

**YMCA Professional Courses**—For many years, the College has administered courses for YMCA professional people. These are taught at the New Haven YMCA.

### The Division of Special Studies

This Division offers a series of special courses in engineering, business and general areas. Usually students taking these courses do not receive academic credits. The courses ordinarily are designed to provide supplemental knowledge and skills needed in specialized jobs in business and industry.

### **The School of Executive Development**

This four-year program for middle-level executives consists of advanced studies in the field of management, with emphasis placed on the development of the student's breadth and understanding outside the area of his or her specialization. The School is guided by a group of senior executives of New Haven area businesses and industries. Its enrollment is limited to individuals designated by their respective companies and approved by the College. The program is offered in the late afternoon hours.

### **The Reading Center**

It is the aim of the New Haven College Reading Center to offer a varied program of reading techniques and study skills to fit the specific needs of students and adults. The program is designed for classroom group teaching techniques on the elementary, secondary, college and adult levels. The program includes small group and individual tutoring for students of all age and accomplishment levels. In-plant management training programs can be arranged.

### **Accreditations and Memberships**

New Haven College is a coeducational, non-sectarian, independent institution of higher learning chartered by the Legislature of the State of Connecticut and accredited by the Connecticut State Department of Education as a junior and senior college. The college holds membership at the two year level in the New England Association of Colleges and Secondary Schools and is also a member of New England and national educational and professional organizations.

### **Evening and Extension Credit Divisions**

GEORGE A. SCHAEFER, Director

#### **Aims and Objectives**

The College believes that work is good educational experience, but it is improved when related to academic instruction. This means that a student's work and scholastic program should be integrated as far as possible. By such integration the traditional barrier between the academic and the practical may be broken down.

In accordance with this viewpoint, the College encourages and assists its students to seek employment related to their degree programs or to pursue courses of study related to their work. The relationship between work and study necessarily varies, of course, but becomes increasingly important after the first year of study. The placement activity of the College is designed to implement the idea of an integrated program of work and study.

#### **Schedule of Hours and Subject Load**

All courses, except laboratory courses, offered in the Evening Credit Program are scheduled to meet from 7:00 to 9:45 P.M. The College is operated Monday through Friday.

A student may carry as few as three semester hours or as many as ten, depending on his wishes. The same academic standards are required of the student regardless of the number of credits he carries.

#### **Application and Admission**

In general, graduates of accredited secondary schools are eligible for admission. However, in special cases persons who have not completed their high school educa-

tion may be admitted to the various divisions of New Haven College by meeting certain specified conditions.

In the case of adults, the College is interested in evidence of maturity and motivation as well as in formal education as prerequisites for admission.

With the exception of "auditors," students wishing to take any course, whether or not they seek a degree, must satisfy the admission requirements.

### Classification of Students

There are three classifications of students in the Evening Credit Programs:

*Degree Student*—The degree student indicates on his registration that he is undertaking to complete the requirements for the A.S. degree or B.S. degree in one of the Evening Credit Programs. He must satisfy all the admission requirements and be a fully matriculated student.

*Non-Degree Student*—The non-degree student is one who does not intend to meet all the requirements for a degree, but who wishes to select certain subjects which are offered as a part of the degree requirements. Although not seeking a degree, the non-degree student must satisfy all admission requirements in the same way as the degree student, thus making it possible for him to become a degree candidate at any later registration simply by so indicating on his registration. Although the student is not a candidate for a degree, he must be fully matriculated.

*Auditor*—The classification of auditor is assigned to persons who wish merely to attend class and listen to the discussion. Since they are not required to meet any of the admission requirements, they are not privileged to participate in discussion, nor to have tests and examinations graded by the instructor; they are not subject to attendance regulations, and are not granted credit.

### Admission of Students from Secondary Schools

**Requirements**—The following regulations apply to the admission of students from secondary schools.

The applicant should be a graduate of an approved secondary school or should possess a state high school diploma.\* In some cases, an adult who has completed at least two years of secondary school with satisfactory record may be considered, provided he performs exceptionally well on the placement examinations which are required. The admission of such an adult will be tentative for one year, during which time he must pass the state examinations for the state high school diploma.\* No person will be considered who has not completed at least two years of secondary school. The quality of the secondary school record, especially of the academic subjects it contains, is given greater consideration than is the specific pattern of courses taken in secondary school.

Applicants from secondary schools are required to take admission tests, including Scholastic Aptitude, Mechanics of English, Reading Comprehension, and Mathematics. College Entrance Examination Board results, if satisfactory, are accepted in place of the New Haven College admission examinations.

\* Information regarding the examinations for the state high school diploma may be obtained from the Director of Admissions, or by writing to the Bureau of Youth Services, State Department of Education, State Office Building, Hartford, Connecticut.

### Admission of Students Transferring from Other Colleges

**Requirements**—Transfer students who present evidence of completion of at least thirty semester hours of study at an accredited college with a grade of "C" or better may be admitted on the basis of an official transcript and will not be required to take the Scholastic Aptitude Examination.

For the purpose of determining placement, the following examinations are required as indicated below:

The *Mechanics of English Examination* and the *Reading Comprehension Examination* are required unless the transcript shows the completion of at least three semester hours of college English with a grade of "C" or better.

The *Mathematics Examination* is required unless the transcript shows the completion of at least three semester hours of college mathematics with "C" or better grades.

Placement in courses as a result of the above examinations will be on the same basis as for applicants from secondary schools.

Transfer students who *do not have* the required thirty semester hours of work as noted above, or who have been dismissed for academic deficiency, are required to take the Scholastic Aptitude Examination in addition to the other placement examinations which are applicable, as described above. Students who have been dismissed for academic deficiency will be considered only after the lapse of one semester.

Transfer students who are not certain of the quality of their previous work are advised to take all entrance examinations.

**Advanced Standing**—Credit for work applicable to the program undertaken at New Haven College will be evaluated tentatively upon receipt of the official transcript from the previous college. It will be officially granted only upon the successful completion of a year's work at New Haven College.

Transfer students who wish to fulfill the requirements of the A.S. degree at New Haven College must complete a minimum of eighteen semester hours at this College, twelve of which are in their field of specialization.

Transfer students for the B.S. degree must complete a minimum of thirty semester hours at this College, fifteen of which are in their field of specialization.

### Application Procedures

Those interested in seeking admission should call or write the College and arrange for a personal interview with a staff member. At the time of the interview the applicant will complete a Personal Data Form and will plan his program. Interviews may be scheduled during college office hours at the convenience of the applicant.

When the student decides to seek admission, he pays the application fee and arranges for the procurement of necessary transcripts.

Following application, the College requests the secondary school record of the applicant. Applicants who wish to present college transcripts, either for admission purposes or for advanced standing, must themselves request their college transcripts be sent to the College. The College provides a form for this purpose.

The applicant next takes such placement examinations as are required of him and is notified in writing of his acceptance or rejection, and of the subjects he will be required to take as a result of his performance on the placement examinations.

During the registration period he fills out the registration forms indicating the courses he wants, and pays the tuition charges.

### Transferability of Credit

In accordance with the usual practice among institutions of higher learning, transfer of credit from this College to another institution will be determined by the other institution in terms of the achievement and promise of the individual seeking transfer. The institution to which transfer is being made will also evaluate specific courses in terms of their length and content in relation to its specific requirements. New Haven College is an accredited institution and its credits will be given consideration by the major institutions of the country in terms of the conditions outlined above.

### Student Personnel Service

**Counseling and Guidance**—The College maintains counseling and guidance officers on its staff. Staff and faculty also reserve many hours for counseling with students. Appointments for this purpose should be made at the Evening Reception Office.

**Placement Service**—An evening placement service office is maintained by the College. Although the College does not conceive its function to be that of a public employment service, it is interested in and prepared to render placement service within the limitations of its purpose and resources.

A student or former student of the College who desires placement should call at the office for a placement application form and at that time will receive specific information as to whom he is to contact in regard to his placement problem.

A company wishing to use the placement facilities of the College should list the position and the desired qualifications in the form of a letter. A member of the College staff will then contact the company to discuss procedure and possibilities of filling the position.

**Financial Aid and Scholarships**—Various types of financial aid are available at the College. A limited number of partial tuition grants in aid are available during the Fall and Spring semesters. Criteria are need and scholastic standing. Various organizations make available each year a limited number of academic scholarships. For further information contact the Evening Director.

### The Evening Student Council

Membership in the Evening Student Council is open to all evening credit students who have successfully completed one full semester. Nominations and elections by secret ballot are conducted in the spring of each year. Council meetings open to all evening credit students are held monthly.

The Council has three primary objectives:

To unite the evening students to promote the welfare of the evening student body of the College.

To give counsel and encouragement to all evening students of the College and to develop a school spirit among them.

To convey evening student opinion to the administration and to work with the officers of the College to accomplish student objectives.

**Fraternities**—In 1965, an Evening Fraternity, Kappa Omega Epsilon, was formed. The constitution of the Fraternity indicates its functions to be the promotion of fellowship without racial, religious or social barriers; to promote scholarship by setting an example of high scholastic achievement; to support athletic programs; and to perpetuate mature leadership. Students interested in more information are invited to write care of the Evening Division Office.

*Student Publications include:* The News, the all-college newspaper edited and published by the student group; The Chariot, the annual yearbook; and the Student Handbook. Any student may volunteer his services on any of the student publications.

### Library

The Library contains upwards of 25,000 catalogued volumes in an open-shelf arrangement, with facilities for study and browsing. Subscriptions to approximately 275 periodicals and extensive back-issue files are maintained. There are also a pamphlet collection and rapidly growing microfilm files. These materials, while strongest in the specific areas of study in the college curriculum, cover all fields.

The resources of the Free Public Library of New Haven (380,000 volumes) and of the West Haven Public Library (79,000 volumes) are available to all students of the College. For those who are not residents of the respective communities, there is a nominal borrower's charge, although anyone may use materials within the building of these libraries.

### Alumni Association

Membership in the Alumni Association is acquired immediately upon graduation from either the associate or bachelor program. A member of the administrative staff of the College serves as Director of Alumni Relations.

In addition to the annual meeting, other meetings of social and educational interest occur during the year, and a quarterly publication, the Alumni News, is mailed without charge to each alumnus.

The Alumni Association is represented on the Board of Governors by its president and another member elected by the Association.

### Scholastic Regulations

**Grading System**—The following grading system is in use and, except where otherwise specified, applies both to examinations and to term work. The weight of a final examination grade is a matter individually determined by each instructor. A—Superior, B—Good, C—Fair, D—Lowest passing grade, F—Failure.

- Inc. Incomplete. Indicates that some work remains to be completed. Such work must be made up within six months in order to remove the "incomplete." Otherwise, the "Inc." remains on the student's record, no credit is given for the course and it must be repeated before further work for which it is prerequisite may be taken.
- WD Withdrawal. Indicates either: (1) Withdrawal prior to midpoint of semester, or (2) withdrawal after midpoint of semester and work satisfactory at that time.
- WF Indicates withdrawal after midpoint of semester with unsatisfactory work.
- S Satisfactory. Given only in non-credit courses.
- U Unsatisfactory. Given only in non-credit courses.

**Grade Reports**—Reports of the final grade in each subject will be mailed to the student soon after the close of each semester. The same report will be mailed to employers in those instances where the student has given his approval. Reports will be mailed to parents or guardians of all students under 21.

**Academic Standards**—The academic standing of each student will be determined on the basis of his quality point ratio each semester.

During each semester of enrollment in the College, a quality point ratio of 1.5 is required.

Failure to earn the required quality point ratio in any semester will place a student on academic probation for the following semester of enrollment.

Attention is called to the fact that the minimum quality point ratio of 1.5 which is required to remain in good academic standing from semester to semester is insufficient to meet the graduation requirement of a total quality point ratio of 2.0. Therefore, the fact that a student may never have been on probation is no guarantee that he will meet graduation requirements.

In order to determine quality point ratios, each letter grade is assigned a quality point value: A—4 quality points, B—3 quality points, C—2 quality points, D—1 quality point, F—0 quality points.

The quality point ratio for all credit students is obtained by multiplying the quality point value of each grade by the number of semester hours of the course, then dividing the total quality points by the total semester hours.

### **Removal of Probation or Dismissal for Academic Deficiency—**

1. A student who has twice been on probation will be dismissed from the division of the College in which he is enrolled the next time his quality point ratio for any semester falls below the required minimum.

2. A student whose quality point ratio in any one semester is less than 1.0 will be dismissed from the College.

**Readmission**—Application for readmission after a student has been dismissed will be considered only after the lapse of a semester and only when the student provides evidence which indicates his probable success if readmitted.

Requests for readmission should be submitted in writing to the Dean at least three weeks before the opening of the semester and should include evidence supporting the student's belief that he will succeed if readmitted.

Readmission does not automatically follow; each application is decided individually by the Committee on Academic Standing.

**Dean's List**—Evening students who have accumulated a minimum of 14 semester hours at the College will automatically be considered for the Dean's List at the end of each semester. A cumulative quality point ratio of 3.20 or better is required.

### **Withdrawal—Evening Division**

*From College*—Students are required to discuss their intentions with the Director of the Evening Division before withdrawing from the College.

*From a Program*—Students considering a change in program should first discuss the matter with the Department Chairman of the proposed new program. If it is agreed that the change is advisable, written permission will be granted. Forms for making a change are provided at the Evening Reception Desk.

*From a Course*—Forms are provided at the Evening Reception Desk.

### Requirements for the Degrees

The Associate and Bachelor degrees will be conferred at Commencement when the student has met *all* the requirements of his program and:

1. Has earned a cumulative quality point ratio of at least 2.0;
2. Has been recommended by the faculty;
3. Has met all financial obligations.

### Core Requirements for Bachelor Programs

The following course requirements must be fulfilled by all Bachelor Degree students in the College.

| <i>Business Administration</i><br>Min. Req. | <i>Subject Areas</i>          | <i>Engineering</i><br>Min. Req. |
|---------------------------------------------|-------------------------------|---------------------------------|
| 15 s.h.                                     | ENGLISH AND HUMANITIES        | 12 s.h.                         |
| 3                                           | English Composition           | 3                               |
| 3                                           | Eng. Comp. and Literature     | 3                               |
| 6                                           | Humanities                    | 6                               |
| 3                                           | Speech                        |                                 |
| 18 s.h.                                     | SOCIAL STUDIES AND PHILOSOPHY | 15 s.h.                         |
| 6                                           | *Economics                    | 6                               |
| 6                                           | Political Science             | 3-6                             |
| 3                                           | Sociology                     | 3-6                             |
| 3                                           | Philosophy                    | 3-6                             |
|                                             | History                       | 6-12                            |
| 12 s.h.                                     | SCIENCE AND MATHEMATICS       | 35 s.h.                         |
|                                             | Physics                       | 12                              |
|                                             | Chemistry                     | 8                               |
| 6                                           | Science                       |                                 |
| 6                                           | Mathematics                   | 15                              |
| 3 s.h.                                      | PERSONAL DEVELOPMENT          | 3 s.h.                          |
| 3                                           | Psychology                    | 3                               |
| 48 Total                                    |                               | Total 65                        |

\* 2 Semesters required of all students.

### Associate in Science Degree with Honors

A degree *with Honors* is awarded to students who have a quality point ratio of 3.25 for the semester hours specifically required for the degree program from which they are being graduated, and who have taken all the required work at this College.

Transfer students will be awarded honors on the same basis, provided however, that their total average will be considered only when they have an honor average for studies completed at this College.

A degree *With High Honors* is awarded to students who have a quality point ratio of 3.50 based on the same considerations as noted above.

In determining eligibility for degrees with honors, credits earned by crediting examinations and electives in excess of those required will not be considered.

### Bachelor of Science Degree with Honors

*Honors* may be conferred upon candidates for graduation who have completed at least 60 semester hours of work at New Haven College in their junior and senior years. The following standards shall be used:

1. The Bachelor's degree *Cum Laude* may be awarded to a student whose cumulative quality point ratio is at least 3.25 at the end of the first semester of his senior year and who continues to attain the same standard for the remainder of the year.

2. The Bachelor's degree *Magna Cum Laude* may be awarded to a student whose cumulative quality point ratio is at least 3.50 at the end of the first semester of his senior year, who continues to attain the same standard for the remainder of the year, whose quality point ratio in all courses counting toward his major is at least 3.50, and who has completed all the suggested courses within his curriculum.

3. The Bachelor's degree *Summa Cum Laude* may be awarded to a student whose cumulative quality point ratio is at least 3.70 at the end of the first semester of his senior year, who continues to attain the same standard for the remainder of the year, whose quality point ratio in all courses counting toward his major is at least 3.70, and who has completed all the suggested courses within his curriculum.

### Advanced Study

Advanced study courses are offered for qualified students in the departments offering the degree of Bachelor of Science. These courses may include a thesis, tutorial work, or independent study which permits the students to work intensively in areas of special interest.

### Registration

**Degree and Non-Degree Students**—There are two parts to registration: the completion of the registration forms and the payment of tuition. Both should be completed before the closing date of registration as stated in the calendar. There is a penalty fee for delaying either of these two processes beyond the closing date of registration.

Registration is possible within office hours during the registration dates stated in the calendar.

Registering for new students must be in person at the College office. Currently enrolled evening students may register by mail. Forms are mailed to the student prior to the announced registration dates.

A separate registration is required for each of the semesters and for the summer session.

Auditors follow the same procedure and pay the same fees as credit students.

### Changes of Registration and Schedules

Students are urged to plan their program carefully before completing the registration forms in order to avoid the need for requesting changes. Once the registration period has ended, the student is charged the Change of Registration Fee for each change which he makes. The fee is payable when the student completes the form requesting the change.

### Course Revisions

The College reserves the right to change, delete, or add courses, without notice, as circumstances may require.

### Attendance Regulations

Classes are operated on the policy that it is necessary for all students to attend all class meetings. If a class is missed, the benefits from participation in the class discussion and instruction are completely lost. No student, regardless of ability, can afford that loss.

A student is allowed only two absences per semester for a 3-or-4 semester hour course. If the student is absent more than twice, permission to continue in the course must be obtained from the instructor.

## The Summer Sessions

The College offers summer sessions in both the Day and Evening Divisions with these primary functions:

To provide an opportunity for study to students of the area who attend other schools during the regular academic year. For financial reasons, most of these students find it desirable to live at home and work while attending summer school.

To offer an opportunity to present and prospective students of New Haven College to attend summer classes.

The usual reasons for attending summer sessions include making up deficiencies, satisfying prerequisites for advanced courses, and acquiring advanced standing.

Students in either credit division at New Haven College may attend either day or evening sessions in the summer. Those looking forward to entering college may use summer classes to satisfy entrance requirements.

Some 64 other institutions have authorized their students to take courses here and transfer their credits. Prior approval by the parent school is necessary to insure transfer credit. The College is a member of the New England Association of Colleges and Secondary Schools.

**Registration**—For all new students a personal interview with a staff member of the College is necessary. Registration procedures will be explained at this time. For those new students who desire work for credit in other institutions, prior approval should be obtained from those institutions. This procedure should be followed each semester regardless of previous attendance.

## Tuition and Fees

### Evening Division: Regular Academic Year

Application fee—payable only once at the initial time of application. Not refundable ..... \$10.00

Tuition—per credit hour or equivalent ..... 25.00

Student activity fee—per 3 credit hours or equivalent ..... 2.00

Covers subscription to College newspaper, use of Student Center, and helps to defray cost of all student activities and facilities.

Change of registration—assessed for changing courses or sections after the completion of registration ..... 5.00

### Summer Terms

For information regarding both Day and Evening summer sessions, request the Summer School Bulletin.

### Other Charges

Late registration—assessed for failure to complete registration and/or payment of fees before closing date of registration. Not refundable ..... 5.00

Laboratory and Breakage fees—payable each semester by students registering for courses requiring the laboratory fee. See Course Description for specific amounts. Not refundable.

|                                                                                                                                                                                                |       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Make-up Examination—assessed when a student is permitted to take an end-of-semester examination at other than the scheduled time except for conflicts caused by the examination schedule ..... | 5.00  |
| Make-up Test—assessed when a student is permitted to make up an announced test during the semester .....                                                                                       | 3.00  |
| Auditors—the fee for a student auditor in any course or courses is the same as if the courses were taken for credit.                                                                           |       |
| Graduation fee—assessed regardless of participation in exercises and due before March 1st of year of graduation. Not refundable .....                                                          | 25.00 |
| Transcript of academic work—no charge for the first one; thereafter, per copy .....                                                                                                            | 1.00  |

### Payment of Bills

Tuition, fees, and other college charges are payable at time of registration. Payment made by check or money order should be made payable to New Haven College.

A deferred payment plan is available to all full-time students and to all part-time students carrying 6 or more credit hours or the equivalent. Details of this plan are available at the Business Office.

*Summer Terms:* Because of the short duration of the summer terms, the total amount due for tuition and fees is due and payable at time of registration for each term.

### Failure to Pay

The College withholds the giving of grades, the issuance of transcripts, and the granting of honorable dismissal to any student whose account is in arrears.

### Refund of Tuition

Registration does not carry with it the right of a refund of tuition in cases of withdrawal. No deduction is made for temporary absence from classes, nor is any refund made if a student is suspended or dismissed.

Requests for withdrawal should be made in person through the Evening Office. If this is not possible, a letter requesting withdrawal must be sent to the Director, Evening Credit Division. Telephone requests cannot be honored.

Tuition only is refunded or cancelled by one of two methods upon receipt of formal withdrawal request:

1. Percentage basis for any reason before or during the first four weeks of the semester.

- 80% of semester tuition before or during first week
- 60% of semester tuition during second week
- 40% of semester tuition during third week
- 20% of semester tuition during fourth week
- None after fourth week

2. Pro-rata basis of tuition involving:

- (a) death or protracted illness of student
- (b) involuntary induction into military service
- (c) transfer or change in work initiated by employer that precludes meeting class schedules

All requests for refunds under this method must be documented.

# NEW HAVEN COLLEGE

## Evening Credit Division

OFFERING THE DEGREE  
ASSOCIATE in SCIENCE in:

*General Studies*  
*Business Administration*  
*Engineering, with majors in:*

*General Engineering*  
*Electrical Engineering*  
*Industrial Engineering*  
*Mechanical Engineering*  
*Metallurgical Engineering*

OFFERING THE DEGREE  
BACHELOR of SCIENCE in:

*Business Administration, with majors in:*  
*Accounting*  
*Business Administration*  
*Industrial Administration*  
*General or Computer Option*  
*Marketing*  
*Public and Social Administration*  
*Electrical Engineering*  
*Industrial Engineering*  
*Mechanical Engineering*

## Extension Credit Division

OFFERING THE DEGREE  
ASSOCIATE in SCIENCE in:

*Police Science and Administration*  
*(West Haven Campus)*

OFFERING THE DEGREE  
BACHELOR of SCIENCE in:

*Engineering*  
*(Groton, Connecticut)*

## Associate in Science Programs

### GENERAL STUDIES

It is recognized that there are students who desire a general education. They include those who wish a college degree in the field of general studies but do not desire a bachelor degree. Also there are those who have not selected their field of specialization but desire to start with education of a general nature. The general studies program provides an Associate's degree which may be the basis for later transfer into a Bachelor's program.

The Associate in Science in General Studies is awarded upon the successful completion of 60 semester hours.

The total hours required are distributed as follows:

| FIRST YEAR  |                                           |                      |        |                                             |                      |
|-------------|-------------------------------------------|----------------------|--------|---------------------------------------------|----------------------|
|             | <i>Fall</i>                               | <i>Sem.<br/>Hrs.</i> |        | <i>Spring</i>                               | <i>Sem.<br/>Hrs.</i> |
| *E 113      | English Composition                       | 3                    | E 206  | Eng. Comp. & Literature                     | 3                    |
| E 114       | Speech                                    | 3                    | P 111  | Psychology                                  | 3                    |
| SS 131      | Hist. of West. Civ. to<br>the Renaissance | 3                    | SS 132 | Hist. of West. Civ. from<br>the Renaissance | 3                    |
| SECOND YEAR |                                           |                      |        |                                             |                      |
| E 201       | Humanities I                              | 3                    | E 202  | Humanities II                               | 3                    |
| SS 113      | Sociology                                 | 3                    |        | Science or Math                             | 3                    |
|             | Science or Math                           | 3                    |        | Elective                                    | 3                    |
| THIRD YEAR  |                                           |                      |        |                                             |                      |
| E 211       | Survey of Eng. Lit. I or                  |                      | E 212  | Survey of Eng. Lit. II or                   |                      |
| E 213       | Survey of Am. Lit. I                      | 3                    | E 214  | Survey of Am. Lit. II                       | 3                    |
| EC 133      | Prin. of Economics I                      | 3                    | EC 134 | Prin. of Economics II                       | 3                    |
|             | Elective                                  | 3                    |        | Elective                                    | 3                    |
| FOURTH YEAR |                                           |                      |        |                                             |                      |
| PHL 111     | Probs. of Philosophy or                   |                      |        |                                             |                      |
| PHL 113     | History of Philosophy                     | 3                    |        |                                             |                      |
|             | Elective                                  | 3                    |        |                                             |                      |

Electives totaling 12 semester hours are to be selected from any credit offerings of the College for which the student satisfies prerequisites.

TOTAL hours required for Associate in Science Degree—60 Semester Hours.

\* Entrance into this course is permitted upon satisfactory performance on the placement examination.

### BUSINESS ADMINISTRATION

Business and industry today require trained people with a broad background, not only in the required technical subjects but also in the equally important social and liberal studies. To equip them for responsible positions in these fields, there is first the basic program in general business administration. This may be terminal or the foundation for the bachelor program, which provides five specialized fields of study.

Associate in Science Program: This program lays the groundwork in business principles and practices and supplies the necessary supporting courses in the liberal arts. Included are basic courses in economics, accounting, marketing and the effects of government and law on business.

Graduates receive the degree of Associate in Science in Business Administration. Since the curriculum offers the first half of the bachelor program, the student may be qualified to continue for a bachelor degree, specializing as his chosen career demands.

**Business Administration Major****FIRST YEAR**

|        | <i>Fall</i>               | <i>Sem.<br/>Hrs.</i> |        | <i>Spring</i>              | <i>Sem.<br/>Hrs.</i> |
|--------|---------------------------|----------------------|--------|----------------------------|----------------------|
| A 111  | Introductory Accounting I | 3                    | A 112  | Introductory Accounting II | 3                    |
| BA 101 | Business Law I            | 3                    | BA 102 | Business Law II            | 3                    |
| *E 113 | English Composition       | 3                    | E 206  | Eng. Comp. & Lit.          | 3                    |

**SECOND YEAR**

|        |                         |   |        |                          |   |
|--------|-------------------------|---|--------|--------------------------|---|
| EC 133 | Prin. of Economics I    | 3 | EC 134 | Prin. of Economics II    | 3 |
| IE 221 | Data Processing         | 3 | E 114  | Speech                   | 3 |
| M 115  | Mathematical Analysis I | 3 | M 116  | Mathematical Analysis II | 3 |

**THIRD YEAR**

|        |                         |   |         |                                 |   |
|--------|-------------------------|---|---------|---------------------------------|---|
| BA 105 | Principles of Marketing | 3 | *BA 106 | Principles of Selling           | 3 |
| E 201  | Humanities I            | 3 | E 202   | Humanities II                   | 3 |
|        | Elective                | 3 | EC 240  | Economics of Labor<br>Relations | 3 |

**FOURTH YEAR**

|        |                   |   |
|--------|-------------------|---|
| P 111  | Psychology        | 3 |
| SS 121 | Political Science | 3 |
| SS 113 | Sociology         | 3 |

**Accounting Major**

Those students planning to continue to the Bachelor of Science in Business Administration, Accounting Major, should take the following course sequence:

**FIRST YEAR**

|        | <i>Fall</i>               | <i>Sem.<br/>Hrs.</i> |        | <i>Spring</i>              | <i>Sem.<br/>Hrs.</i> |
|--------|---------------------------|----------------------|--------|----------------------------|----------------------|
| A 111  | Introductory Accounting I | 3                    | A 112  | Intermediate Accounting II | 3                    |
| BA 101 | Business Law I            | 3                    | BA 102 | Business Law II            | 3                    |
| *E 113 | English Composition       | 3                    | E 206  | Eng. Comp. & Lit.          | 3                    |

**SECOND YEAR**

|        |                           |   |        |                            |   |
|--------|---------------------------|---|--------|----------------------------|---|
| A 221  | Intermediate Accounting I | 3 | A 222  | Intermediate Accounting II | 3 |
| EC 133 | Prin. of Economics I      | 3 | EC 134 | Prin. of Economics II      | 3 |
| M 115  | Mathematical Analysis I   | 3 | M 116  | Mathematical Analysis II   | 3 |

**THIRD YEAR**

|       |                       |   |       |                        |   |
|-------|-----------------------|---|-------|------------------------|---|
| A 223 | Cost Accounting I     | 3 | A 224 | Cost Accounting II     | 3 |
| A 331 | Advanced Accounting I | 3 | A 332 | Advanced Accounting II | 3 |
| E 201 | Humanities I          | 3 | A 202 | Humanities II          | 3 |

**FOURTH YEAR**

|        |                    |   |
|--------|--------------------|---|
| A 333  | Auditing           | 3 |
| BA 105 | Prin. of Marketing | 3 |
| IE 221 | Data Processing    | 3 |

TOTAL hours required for Associate in Science Degree—63 Hours.

\* Entrance into this course is permitted upon satisfactory performance on the placement examination.

\*\* Not required of those majoring in Accounting, Computer Option in Industrial Administration or Public & Social Administration. Elective is substituted.

## ENGINEERING

The purpose of this series of Engineering Programs is to meet the needs of students who wish to specialize in one of the fields of engineering offered by the College without undertaking a bachelor program. The first two years a student will take the necessary courses in Physics and Mathematics which are prerequisites for most engineering courses. The third and fourth years allow selection from the following engineering fields: General, Electrical, Industrial, Mechanical, or Metallurgical. Required courses total 47-62 semester hours, restricted electives 11-17, and other electives as allowed, to a total of 70 semester hours required for the Associate in Science Degree in Engineering.

### COMMON CORE COURSES

| FIRST YEAR |                     |                      |        |                      |                      |
|------------|---------------------|----------------------|--------|----------------------|----------------------|
|            | <i>Fall</i>         | <i>Sem.<br/>Hrs.</i> |        | <i>Spring</i>        | <i>Sem.<br/>Hrs.</i> |
| *E 113     | English Composition | 3                    | E 206  | English Comp. & Lit. | 3                    |
| ME 101     | Graphics I          | 3                    | IE 214 | Management Theory    | 3                    |
| *M 115     | Intro. Analysis I   | 3                    | IE 102 | Intro. to Computers  | 2                    |

| SECOND YEAR |                       |   |        |                  |   |
|-------------|-----------------------|---|--------|------------------|---|
| MT 123      | Engineering Materials | 3 | E 201  | Humanities I     | 3 |
| M 117       | Calculus I            | 3 | M 118  | Calculus II      | 3 |
| PH 108      | Physics I w/lab       | 3 | PH 209 | Physics II w/lab | 3 |

\* Entrance into this course is permitted upon satisfactory performance on the placement examinations.

\*\* This course may be waived by successful achievement in mathematics placement tests.

### Major in General Engineering

#### THIRD & FOURTH YEARS

|        | <i>Fall</i>              | <i>Sem.<br/>Hrs.</i> |        | <i>Spring</i>             | <i>Sem.<br/>Hrs.</i> |
|--------|--------------------------|----------------------|--------|---------------------------|----------------------|
| EE 223 | Prin. of Elect. Engin. I | 3                    | EE 224 | Prin. of Elect. Engin. II | 3                    |
| ME 201 | Mechanics-Statics        | 3                    | ME 124 | Mechanical Processes      | 3                    |
|        | Free Electives           | 6                    |        | Restricted Electives      | 17                   |

Restricted Electives totaling 17 semester hours are to be selected from the following courses:

|            |                        |   |        |                        |   |
|------------|------------------------|---|--------|------------------------|---|
| CH 101-102 | Gen. Chemistry w/lab   | 8 | PH 210 | Physics III            | 3 |
| EE 330     | Intro. to Automation   | 3 | M 203  | Calculus III           | 3 |
| EE 336     | Instrum. Electronics   | 3 | M 204  | Differential Equations | 3 |
| ME 202     | Mechanics of Materials | 3 | PH 323 | Physics IV             | 3 |
| ME 204     | Mechanics-Dynamics     | 3 | MT 219 | Physical Metallurgy    | 3 |
| IE 234     | Production Control     | 3 | MT 220 | Metallography          | 3 |
| IE 119     | Ind. Safety & Hygiene  | 3 | IE 241 | Methods & Motion Study | 3 |
| IE 233     | Cost Control           | 3 | IE 342 | Work Measurement       | 3 |

### Major in Electrical Engineering

#### THIRD & FOURTH YEARS

|        | <i>Fall</i>              | <i>Sem.<br/>Hrs.</i> |        | <i>Spring</i>             | <i>Sem.<br/>Hrs.</i> |
|--------|--------------------------|----------------------|--------|---------------------------|----------------------|
| EE 223 | Prin. of Elect. Engin. I | 3                    | EE 224 | Prin. of Elect. Engin. II | 3                    |
| EE 331 | Alt. Current Circuits I  | 3                    | EE 332 | Alt. Current Circuits II  | 3                    |
| M 203  | Calculus III             | 3                    | M 204  | Differential Equations    | 3                    |
|        | Free Elective            | 3                    |        | Restricted Electives      | 14                   |

Restricted electives totaling 14 semester hours are to be selected from the following courses:

|            |                                 |   |        |                          |   |
|------------|---------------------------------|---|--------|--------------------------|---|
| CH 101-102 | Gen. Chem. w/lab                | 8 | M 303  | Advanced Calculus I      | 3 |
| EE 330     | Intro. to Automation            | 3 | M 304  | Advanced Calculus II     | 3 |
| EE 336     | Instrum. Electronics            | 3 | EE 437 | Ind. Power Systems Engr. | 3 |
| EE 343-344 | Electrical Machines             | 8 | EE 438 | Elec. Power Transmission | 3 |
| EE 345     | Auto. Control Theory & Practice | 3 | ME 201 | Mechanics-Statics        | 3 |
|            |                                 |   | ME 204 | Mechanics-Dynamics       | 3 |

## Major in Industrial Engineering

### THIRD & FOURTH YEARS

|                                                                                                | <i>Fall</i>              | <i>Sem.<br/>Hrs.</i> |        | <i>Spring</i>            | <i>Sem.<br/>Hrs.</i> |
|------------------------------------------------------------------------------------------------|--------------------------|----------------------|--------|--------------------------|----------------------|
| EE 223                                                                                         | Prin. of Elec. Engr. I   | 3                    | EE 224 | Prin. of Elec. Engr. II  | 3                    |
| EC 133                                                                                         | Prin. of Economics I     | 3                    | IE 204 | Engineering Economics    | 3                    |
| IE 241                                                                                         | Methods & Motion Study   | 3                    | IE 342 | Work Measurement         | 3                    |
| P 111                                                                                          | Psychology               | 3                    | ME 124 | Mechanical Processes     | 3                    |
|                                                                                                | Restricted Electives     | 6                    |        | Restricted Electives     | 5-6                  |
| Restricted electives totaling 11 semester hours are to be selected from the following courses: |                          |                      |        |                          |                      |
| A 113                                                                                          | Industrial Accounting    | 3                    | IE 233 | Cost Control             | 3                    |
| E 220                                                                                          | Tech. Report Writing     | 3                    | IE 234 | Production Control       | 3                    |
| IE 119                                                                                         | Indust. Safety & Hygiene | 3                    | IE 346 | Statistical Analysis     | 3                    |
| IE 221                                                                                         | Data Processing          | 3                    | IE 351 | Synthetic Motion-Time    |                      |
| IE 224                                                                                         | Programming              | 3                    |        | Systems                  | 3                    |
|                                                                                                |                          |                      | IE 223 | Personnel Administration | 3                    |
|                                                                                                |                          |                      | EC 240 | Econ. of Labor Relations | 3                    |

## Major in Mechanical Engineering

### THIRD & FOURTH YEARS

|                                                                                                | <i>Fall</i>            | <i>Sem.<br/>Hrs.</i> |            | <i>Spring</i>             | <i>Sem.<br/>Hrs.</i> |
|------------------------------------------------------------------------------------------------|------------------------|----------------------|------------|---------------------------|----------------------|
| ME 201                                                                                         | Mechanics-Statics      | 3                    | ME 204     | Mechanics-Dynamics        | 3                    |
| ME 124                                                                                         | Mechanical Processes   | 3                    | ME 202     | Mechanics of Materials I  | 3                    |
| M 203                                                                                          | Calculus III <i>or</i> |                      | M 204      | Diff. Equations <i>or</i> |                      |
| EE 223                                                                                         | Prin. of Elec. Engr. I | 3                    | EE 224     | Prin. of Elec. Engr. II   | 3                    |
|                                                                                                | Restricted Electives   | 14                   |            | Free Elective             | 3                    |
| Restricted electives totaling 14 semester hours are to be selected from the following courses: |                        |                      |            |                           |                      |
| M 203                                                                                          | Calculus III           | 3                    | M 204      | Diff. Equations           | 3                    |
| EE 223                                                                                         | Prin. of Elec. Engr. I | 3                    | EE 224     | Prin. of Elec. Engr. II   | 3                    |
| CH 101                                                                                         | General Chem. w/lab I  | 4                    | CH 102     | General Chem. w/lab II    | 4                    |
| ME 337                                                                                         | Heat Power             | 3                    | ME 321     | Fluid Dynamics            | 3                    |
| ME 311                                                                                         | Machine Elements       | 3                    | ME 315-316 | M.E. Laboratory I & II    | 2                    |
| ME 343                                                                                         | Mechanisms             | 3                    | PH 323     | Physics IV                | 3                    |
| PH 210                                                                                         | Physics III            | 3                    | ME 312     | Mechanical Design         | 3                    |
| ME 307                                                                                         | Mech. of Materials II  | 3                    | MT 219     | Physical Metallurgy       | 3                    |
|                                                                                                |                        |                      | MT 220     | Metallography             | 3                    |

## Major in Metallurgical Engineering

### THIRD & FOURTH YEARS

|                                                                                                | <i>Fall</i>            | <i>Sem.<br/>Hrs.</i> |            | <i>Spring</i>           | <i>Sem.<br/>Hrs.</i> |
|------------------------------------------------------------------------------------------------|------------------------|----------------------|------------|-------------------------|----------------------|
| CH 101                                                                                         | Gen. Chemistry I w/lab | 4                    | CH 102     | Gen. Chemistry II w/lab | 4                    |
| MT 219                                                                                         | Physical Metallurgy    | 3                    | ME 124     | Mechanical Processes    | 3                    |
|                                                                                                | Free Elective          | 3                    | MT 220     | Metallography           | 3                    |
|                                                                                                | Restricted Electives   | 9                    |            | Restricted Electives    | 9                    |
| Restricted electives totaling 15 semester hours are to be selected from the following courses: |                        |                      |            |                         |                      |
| ME 201                                                                                         | Mechanics-Statics      | 3                    | EE 223-224 | Prin. of Elec. Engr.    | 6                    |
| ME 204                                                                                         | Mechanics-Dynamics     | 3                    | PH 210     | Physics III             | 3                    |
| ME 202                                                                                         | Mechanics of Materials | 3                    | PH 315     | Nuclear Physics         | 3                    |
| MT 324                                                                                         | Nuclear Metallurgy     | 3                    | PH 323     | Physics IV              | 3                    |
| MT 331                                                                                         | Non-ferrous Metallurgy | 3                    | MT 301     | Welding Metallurgy      | 3                    |
| MT 342                                                                                         | Steels & Their Heat    |                      | MT 302     | Rubber & Plastics       |                      |
|                                                                                                | Treatment              | 3                    |            | Technology              | 3                    |
|                                                                                                |                        |                      | MT 304     | High Temperature Alloys | 3                    |

TOTAL hours required for Associate in Science Degree—70 semester hours.

## Bachelor of Science Programs

Students may earn a Bachelor of Science degree in any of the following fields: Electrical Engineering, Industrial Engineering, Mechanical Engineering, or Business Administration, which provides five majors. These are Accounting, General Business Administration, Industrial Administration with either General or Computer Option, Marketing, and Public and Social Administration.

### BUSINESS ADMINISTRATION

#### Major in Accounting

(Bachelor of Science)

##### FIRST YEAR

|        | <i>Fall</i>               | <i>Sem.<br/>Hrs.</i> |        | <i>Spring</i>              | <i>Sem.<br/>Hrs.</i> |
|--------|---------------------------|----------------------|--------|----------------------------|----------------------|
| A 111  | Introductory Accounting I | 3                    | A 112  | Introductory Accounting II | 3                    |
| BA 101 | Business Law I            | 3                    | BA 102 | Business Law II            | 3                    |
| *E 113 | English Composition       | 3                    | E 206  | Eng. Comp. & Lit.          | 3                    |

##### SECOND YEAR

|        |                           |   |        |                            |   |
|--------|---------------------------|---|--------|----------------------------|---|
| A 221  | Intermediate Accounting I | 3 | A 222  | Intermediate Accounting II | 3 |
| EC 133 | Prin. of Economics I      | 3 | EC 134 | Prin. of Economics II      | 3 |
| M 115  | Mathematical Analysis I   | 3 | M 116  | Mathematical Analysis II   | 3 |

##### THIRD YEAR

|       |                       |   |       |                        |   |
|-------|-----------------------|---|-------|------------------------|---|
| A 223 | Cost Accounting I     | 3 | A 224 | Cost Accounting II     | 3 |
| A 331 | Advanced Accounting I | 3 | A 332 | Advanced Accounting II | 3 |
| E 201 | Humanities I          | 3 | A 202 | Humanities II          | 3 |

##### FOURTH YEAR

|        |                    |   |        |                        |   |
|--------|--------------------|---|--------|------------------------|---|
| A 333  | Auditing I         | 3 | A 334  | Auditing II            | 3 |
| BA 105 | Prin. of Marketing | 3 | BA 118 | Mathematics of Finance | 3 |
| IE 221 | Data Processing    | 3 | E 114  | Speech                 | 3 |

##### FIFTH YEAR

|        |                        |   |        |                              |   |
|--------|------------------------|---|--------|------------------------------|---|
| A 335  | Income Tax Procedure I | 3 | A 336  | Income Tax Procedure II      | 3 |
| SS 121 | Political Science I    | 3 | EC 240 | Economics of Labor Relations | 3 |
|        | Elective               | 3 | SS 122 | Political Science II or      |   |
|        |                        |   | SS 215 | Comparative Government       | 3 |

##### SIXTH YEAR

|         |                      |   |        |                     |   |
|---------|----------------------|---|--------|---------------------|---|
| BA 113  | Business Finance     | 3 | BA 216 | Business Statistics | 3 |
| PHL 111 | Intro. to Philosophy | 3 | P 111  | Psychology          | 3 |
|         | Science              | 3 |        | Science             | 3 |

##### SEVENTH YEAR

|        |           |   |        |                     |   |
|--------|-----------|---|--------|---------------------|---|
| SS 113 | Sociology | 3 | BA 510 | Business Management | 3 |
|        | Electives | 6 |        | Electives           | 6 |

Electives totaling at least 15 semester hours in non-professional courses are required in addition to the 111 semester hours of specific course requirements. See page 25, Selection of Electives.

TOTAL—Bachelor of Science Degree: 126 Semester Hours.

\* Entrance into this course is permitted upon satisfactory performance on the placement examination.

**Major in Business Administration**

(Bachelor of Science)

**FIRST YEAR**

|        | <i>Fall</i>               | <i>Sem.<br/>Hrs.</i> |        | <i>Spring</i>              | <i>Sem.<br/>Hrs.</i> |
|--------|---------------------------|----------------------|--------|----------------------------|----------------------|
| A 111  | Introductory Accounting I | 3                    | A 112  | Introductory Accounting II | 3                    |
| BA 101 | Business Law I            | 3                    | BA 102 | Business Law II            | 3                    |
| *E 113 | English Composition       | 3                    | E 206  | Eng. Comp. & Lit.          | 3                    |

**SECOND YEAR**

|        |                         |   |        |                          |   |
|--------|-------------------------|---|--------|--------------------------|---|
| EC 133 | Prin. of Economics I    | 3 | EC 134 | Prin. of Economics II    | 3 |
| IE 221 | Data Processing         | 3 | E 114  | Speech                   | 3 |
| M 115  | Mathematical Analysis I | 3 | M 116  | Mathematical Analysis II | 3 |

**THIRD YEAR**

|        |                         |   |          |                                 |   |
|--------|-------------------------|---|----------|---------------------------------|---|
| BA 105 | Principles of Marketing | 3 | **BA 106 | Principles of Selling           | 3 |
| E 201  | Humanities I            | 3 | E 202    | Humanities II                   | 3 |
|        | Elective                | 3 | EC 240   | Economics of Labor<br>Relations | 3 |

**FOURTH YEAR**

|        |                     |   |        |                         |   |
|--------|---------------------|---|--------|-------------------------|---|
| P 111  | Psychology          | 3 | BA 118 | Mathematics of Finance  | 3 |
| SS 121 | Political Science I | 3 | SS 122 | Political Science II or |   |
| SS 113 | Sociology           | 3 | SS 215 | Comparative Government  | 3 |
|        |                     |   |        | Elective                | 3 |

**FIFTH YEAR**

|         |                         |   |        |                     |   |
|---------|-------------------------|---|--------|---------------------|---|
| BA 203  | Prin. of Transportation | 3 | BA 216 | Business Statistics | 3 |
| PHL 111 | Intro. to Philosophy    | 3 | EC 236 | Money & Banking     | 3 |
|         | Science                 | 3 |        | Science             | 3 |

**SIXTH YEAR**

|        |                        |   |        |                         |   |
|--------|------------------------|---|--------|-------------------------|---|
| BA 107 | Advertising            | 3 | BA 312 | International Marketing | 3 |
| BA 113 | Business Finance       | 3 | EC 214 | Public Finance          | 3 |
| EC 211 | Govt. Reg. of Business | 3 | EC 442 | Economic Thought        | 3 |

**SEVENTH YEAR**

|        |                   |   |        |                     |   |
|--------|-------------------|---|--------|---------------------|---|
| EC 445 | Economic Analysis | 3 | BA 510 | Business Management | 3 |
|        | Electives         | 6 | BA 512 | Business Seminar    | 3 |
|        |                   |   |        | Elective            | 3 |

Electives totaling at least 15 semester hours in non-professional courses are required in addition to the 111 semester hours of specific course requirements. See page 25, Selection of Electives.

**TOTAL—Bachelor of Science Degree: 126 Semester Hours.**

\* Entrance into this course is permitted upon satisfactory performance on the placement examinations.

\*\* Not required of those majoring in Accounting, Computer Option in Industrial Administration, or Public & Social Administration. Elective is substituted.

## Major in Industrial Administration

(Bachelor of Science)

### General Option

(First four years are the same as for Business Administration Major)

#### FIFTH YEAR

|         | <i>Fall</i>          | <i>Sem.<br/>Hrs.</i> |        | <i>Spring</i>       | <i>Sem.<br/>Hrs.</i> |
|---------|----------------------|----------------------|--------|---------------------|----------------------|
| IE 233  | Cost Control         | 3                    | BA 216 | Business Statistics | 3                    |
| PHL 111 | Intro. to Philosophy | 3                    | IE 234 | Production Control  | 3                    |
|         | Science              | 3                    |        | Science             | 3                    |

#### SIXTH YEAR

|        |                          |   |        |                      |   |
|--------|--------------------------|---|--------|----------------------|---|
| EC 211 | Govt. Reg. of Business   | 3 | BA 302 | Industrial Marketing | 3 |
| IE 223 | Personnel Administration | 3 | IE 342 | Work Measurement     | 3 |
| IE 241 | Methods & Motion Study   | 3 | ME 124 | Mechanical Processes | 3 |

#### SEVENTH YEAR

|        |                  |   |        |                                     |   |
|--------|------------------|---|--------|-------------------------------------|---|
| BA 113 | Business Finance | 3 | BA 510 | Business Management                 | 3 |
|        | Electives        | 6 | P 212  | Business & Industrial<br>Psychology | 3 |
|        |                  |   |        | Elective                            | 3 |

Electives totaling at least 15 semester hours in non-professional courses are required in addition to the 111 semester hours of specific course requirements. See page 25, Selection of Electives.

TOTAL—Bachelor of Science Degree: 126 Semester Hours.

### Computer Option

(First four years are the same as for Business Administration Major)

#### FIFTH YEAR

|         | <i>Fall</i>          | <i>Sem.<br/>Hrs.</i> |        | <i>Spring</i>       | <i>Sem.<br/>Hrs.</i> |
|---------|----------------------|----------------------|--------|---------------------|----------------------|
| IE 233  | Cost Control         | 3                    | BA 216 | Business Statistics | 3                    |
| PHL 111 | Intro. to Philosophy | 3                    | IE 234 | Production Control  | 3                    |
|         | Science              | 3                    |        | Science             | 3                    |

#### SIXTH YEAR

|        |                      |   |        |                       |   |
|--------|----------------------|---|--------|-----------------------|---|
| BA 113 | Business Finance     | 3 | BA 510 | Business Management   | 3 |
| EC 442 | Economic Thought     | 3 | IE 224 | Programming           | 3 |
| M 227  | Finite Mathematics I | 3 | M 228  | Finite Mathematics II | 3 |

#### SEVENTH YEAR

|        |                  |   |        |                     |   |
|--------|------------------|---|--------|---------------------|---|
| IE 507 | Systems Analysis | 3 | BA 512 | Business Seminar    | 3 |
|        | Electives        | 6 | IE 502 | Operations Research | 3 |
|        |                  |   | IE 510 | Business Games      | 3 |

Electives totaling at least 15 semester hours are required in addition to the 111 semester hours of specific course requirements. See Page 25, Selection of Electives.

TOTAL—Bachelor of Science Degree: 126 Semester Hours.

## Major in Marketing

(Bachelor of Science)

(First four years are the same as for Business Administration Major)

| FIFTH YEAR   |                            |                      |        |                             |                      |
|--------------|----------------------------|----------------------|--------|-----------------------------|----------------------|
|              | <i>Fall</i>                | <i>Sem.<br/>Hrs.</i> |        | <i>Spring</i>               | <i>Sem.<br/>Hrs.</i> |
| BA 107       | Advertising .....          | 3                    | BA 216 | Business Statistics .....   | 3                    |
| BA 301       | Retailing .....            | 3                    | BA 302 | Industrial Marketing .....  | 3                    |
| PHL 111      | Intro. to Philosophy ..... | 3                    |        | Elective .....              | 3                    |
| SIXTH YEAR   |                            |                      |        |                             |                      |
| BA 315       | Marketing Management ..    | 3                    | BA 312 | International Marketing ..  | 3                    |
| BA 342       | Marketing Research .....   | 3                    | BA 316 | Sales Management .....      | 3                    |
|              | Science .....              | 3                    |        | Science .....               | 3                    |
| SEVENTH YEAR |                            |                      |        |                             |                      |
| BA 113       | Business Finance .....     | 3                    | BA 350 | Quant. Marketing Anal. .... | 3                    |
|              | Electives .....            | 6                    | BA 510 | Business Management .....   | 3                    |
|              |                            |                      | BA 512 | Business Seminar .....      | 3                    |

Electives totaling at least 15 semester hours are required in addition to the 111 semester hours of specific course requirements. See below for Selection of Electives.

TOTAL—Bachelor of Science Degree: 126 Semester Hours.

## Major in Public & Social Administration

(Bachelor of Science)

(First four years are the same as for Business Administration Major)

| FIFTH YEAR   |                                      |                      |        |                                        |                      |
|--------------|--------------------------------------|----------------------|--------|----------------------------------------|----------------------|
|              | <i>Fall</i>                          | <i>Sem.<br/>Hrs.</i> |        | <i>Spring</i>                          | <i>Sem.<br/>Hrs.</i> |
| SA 211       | Prin. of Public Administration ..... | 3                    | BA 216 | Business Statistics .....              | 3                    |
| SS 216       | Municipal Government .....           | 3                    | EC 214 | Public Finance .....                   | 3                    |
|              | Science .....                        | 3                    |        | Science .....                          | 3                    |
| SIXTH YEAR   |                                      |                      |        |                                        |                      |
| EC 211       | Govt. Reg. of Business ..            | 3                    | P 212  | Business & Industrial Psychology ..... | 3                    |
| P 211        | Social Psychology .....              | 3                    |        |                                        |                      |
| SA 301       | Social Administration I ..           | 3                    | SS 302 | The U. S. Constitution .....           | 3                    |
|              |                                      |                      | SA 302 | Social Administration II ..            | 3                    |
| SEVENTH YEAR |                                      |                      |        |                                        |                      |
| BA 113       | Business Finance .....               | 3                    | BA 510 | Business Management .....              | 3                    |
| PHL 111      | Intro. to Philosophy .....           | 3                    | BA 512 | Business Seminar .....                 | 3                    |
|              | Elective .....                       | 3                    |        | Elective .....                         | 3                    |

Electives totaling at least 15 semester hours are required in addition to the 111 semester hours of specific course requirements. See below for Selection of Electives.

TOTAL—Bachelor of Science Degree: 126 Semester Hours.

## Selection of Electives

(Bachelor of Science Candidates)

Non-professional courses are those in other than business economic and vocational areas. They include mathematics, science, English, literature, art, music, foreign languages, history, social science, philosophy, and psychology (other than business psychology).

## ENGINEERING

### (Bachelor of Science)

The engineering programs combine the basic courses in chemistry, mathematics, physics, humanities, and social sciences with advanced studies in the various branches of engineering. All students are required to take the same core courses which comprise the first four years of the engineering program. An associate degree in engineering may be received upon completion of the core program.

### COMMON CORE COURSES

#### FIRST YEAR

|        | <i>Fall</i>         | <i>Sem.<br/>Hrs.</i> |        | <i>Spring</i>              | <i>Sem.<br/>Hrs.</i> |
|--------|---------------------|----------------------|--------|----------------------------|----------------------|
| *E 113 | English Composition | 3                    | E 206  | English Composition & Lit. | 3                    |
| ME 101 | Graphics I          | 3                    | M 118  | Calculus II                | 3                    |
| *M 117 | Calculus I          | 3                    | IE 102 | Intro. to Computers        | 2                    |

#### SECOND YEAR

|        |                    |   |        |                     |   |
|--------|--------------------|---|--------|---------------------|---|
| CH 101 | Gen. Chem. I w/lab | 4 | CH 102 | Gen. Chem. II w/lab | 4 |
| P 111  | Psychology         | 3 | PH 108 | Physics I           | 3 |
| M 203  | Calculus III       | 3 | E 201  | Humanities I        | 3 |

#### THIRD YEAR

|        |                     |   |        |                      |   |
|--------|---------------------|---|--------|----------------------|---|
| E 202  | Humanities II       | 3 | M 204  | Diff. Equations      | 3 |
| EE 223 | Prin. Elec. Engr. I | 3 | EE 224 | Prin. Elec. Engr. II | 3 |
| ME 201 | Mechanics-Statics   | 3 | ME 204 | Mechanics-Dynamics   | 3 |

#### FOURTH YEAR

|        |                      |   |          |                       |   |
|--------|----------------------|---|----------|-----------------------|---|
| PH 209 | Physics II           | 3 | **ME 202 | Mech. of Materials    | 3 |
| EC 113 | Prin. of Economics I | 3 | EC 134   | Prin. of Economics II | 3 |
|        |                      |   | PH 210   | Physics III           | 3 |

\* Entrance into this course is permitted upon satisfactory performance on placement examinations.

\*\* Note: Electrical Engineering Majors will take a Social Studies or Phil. Elective in lieu of ME 202.

TOTAL—Associate in Science Degree in Engineering: 70 Semester Hours.

## ELECTRICAL ENGINEERING

### (Bachelor of Science)

Upon satisfactory completion of the four-year core program, the student may pursue advanced courses with specialization in electronics, computers, servomechanisms or industrial controls leading to the Bachelor of Science degree in Electrical Engineering.

In order to acquire the Bachelor of Science degree, the student must complete the required courses listed below and a selected group of electives in the field of his choice.

#### FIFTH AND SIXTH YEARS

|        | <i>Fall</i>              | <i>Sem.<br/>Hrs.</i> | <i>Class<br/>Lab.</i> | <i>Hrs.</i> |        | <i>Spring</i>                       | <i>Sem.<br/>Hrs.</i> | <i>Class<br/>Lab.</i> | <i>Hrs.</i> |
|--------|--------------------------|----------------------|-----------------------|-------------|--------|-------------------------------------|----------------------|-----------------------|-------------|
| EE 331 | Alt. Cur. Circ. I        | 3                    | 0                     | 3           | EE 332 | Alt. Cur. Circ. II                  | 3                    | 0                     | 3           |
| EE 347 | Electron Engr. I         | 3                    | 0                     | 3           | EE 348 | Electron Engr. II                   | 3                    | 0                     | 3           |
| EE347L | Electron Engr.<br>Lab. I | 1                    | 3                     | 0           | EE348L | Electron Engr.<br>Lab. II           | 1                    | 3                     | 0           |
| EE 351 | Engineering Anal. I      | 3                    | 0                     | 3           | EE 352 | Engineering Anal. II                | 3                    | 0                     | 3           |
| EE 343 | Elec. Machines I         | 3                    | 0                     | 3           | EE 344 | Elec. Machines II                   | 3                    | 0                     | 3           |
| EE343L | Elec. Machines<br>Lab. I | 1                    | 3                     | 0           | EE344L | Elec. Machines<br>Lab. II           | 1                    | 3                     | 0           |
| M 303  | Advanced Calculus I      | 3                    | 0                     | 3           |        | Social Studies or<br>Phil. Elective | 3                    | 0                     | 3           |

## SEVENTH AND EIGHTH YEARS

|                                    |   |   |   |                                     |   |   |   |
|------------------------------------|---|---|---|-------------------------------------|---|---|---|
| EE 455 Servomechanisms I <i>or</i> |   |   |   | EE 456 Servomechanisms II <i>or</i> |   |   |   |
| EE 441 Electronic Analog           |   |   |   | EE 442 Electronic Digital           |   |   |   |
| Computers .....                    | 3 | 0 | 3 | Computers .....                     | 3 | 0 | 3 |
| EE 450 Transistor                  |   |   |   | EE 500 Seminar in Transistor        |   |   |   |
| Electronics .....                  | 3 | 0 | 3 | Electronics <i>or</i>               |   |   |   |
| EE 437 Industrial Power            |   |   |   | EE 462 Microwave Fund. ...          | 3 | 0 | 3 |
| Systems Engr. ...                  | 3 | 0 | 3 | EE 451 Advanced Topics in           |   |   |   |
| EE 461 Waves & Fields ...          | 3 | 0 | 3 | Semiconductors ...                  | 3 | 0 | 3 |
| ME 337 Heat Power .....            | 3 | 0 | 3 | PH 323 Physics IV .....             | 3 | 0 | 3 |
| Restricted Engr.                   |   |   |   | EE 504 Lab. Thesis <i>or</i>        |   |   |   |
| Elective .....                     | 3 | 0 | 3 | Restricted Engr.                    |   |   |   |
|                                    |   |   |   | Elective .....                      | 3 | 0 | 3 |
|                                    |   |   |   | Social Studies <i>or</i>            |   |   |   |
|                                    |   |   |   | Phil. Elective .....                | 3 | 0 | 3 |

## Selection of Electives

Restricted electives totaling 6 semester hours, or 3 plus Laboratory Thesis, are to be chosen in consultation with department members and must be approved by the chairman of the Department of Electrical Engineering.

TOTAL—Bachelor of Science degree in Electrical Engineering: 140 Semester Hours.

## INDUSTRIAL ENGINEERING

(Bachelor of Science)

The program in Industrial Engineering is planned to prepare students to apply engineering methods in the solving of the problems of management in industry.

After successful completion of the four-year core program, the student will complete the following required courses and electives as listed.

## FIFTH AND SIXTH YEARS

|                             | Fall | Sem. |      | Class |                               | Spring | Sem. |      | Class |
|-----------------------------|------|------|------|-------|-------------------------------|--------|------|------|-------|
|                             |      | Hrs. | Lab. |       |                               |        | Hrs. | Lab. |       |
| IE 346 Stat. Analysis ..... |      | 3    | 0    | 3     | EE 336 Instrum. Electron. ... |        | 3    | 0    | 3     |
| PH 323 Physics IV .....     |      | 3    | 0    | 3     | A 113 Indus. Accounting ..    |        | 3    | 0    | 3     |
| ME 124 Mech. Proc. ....     |      | 3    | 2    | 2     | IE 234 Production Control     |        | 3    | 0    | 3     |
| IE 221 Data Processing ...  |      | 3    | 0    | 3     | IE 342 Work Measurement       |        | 3    | 2    | 2     |
| IE 241 Meth. & Mot. Study   |      | 3    | 2    | 2     | IE 204 Engr. Economics ...    |        | 3    | 0    | 3     |
| IE 214 Mngt. Theory .....   |      | 3    | 0    | 3     | Restricted Elective ...       |        | 3    | 0    | 3     |

## SEVENTH AND EIGHTH YEARS

|                              |   |   |   |                              |   |   |   |
|------------------------------|---|---|---|------------------------------|---|---|---|
| IE 233 Cost Control .....    | 3 | 0 | 3 | IE 436 Quality Control ...   | 3 | 0 | 3 |
| IE 443 Factory Planning ...  | 3 | 2 | 2 | IE 502 Oper. Research ...    | 3 | 0 | 3 |
| EC 240 Econ. of Labor Rel.   | 3 | 0 | 3 | IE 504 Lab. Thesis .....     | 3 | 3 | 0 |
| *Math Elective .....         | 3 | 0 | 3 | Free Elective ...            | 3 | 0 | 3 |
| Restricted Elective          | 3 | 0 | 3 | Soc. Studies <i>or</i> Phil. |   |   |   |
| Soc. Studies <i>or</i> Phil. |   |   |   | Elective .....               | 3 | 0 | 3 |
| Elective .....               | 3 | 0 | 3 |                              |   |   |   |

## Selection of Electives

\* M 372 Mathematical Statistics or M 237 Scientific Programming.

Restricted electives totaling 6 semester hours are to be chosen in consultation with department members and must be approved by the chairman of the Department of Industrial Engineering.

TOTAL—Bachelor of Science Degree in Industrial Engineering: 139 Semester Hours.

## MECHANICAL ENGINEERING

(Bachelor of Science)

Upon satisfactory completion of the four-year core program, the student may pursue advanced courses with specialization in machine design, automatic control, metallurgy, mechanics, etc., leading to the Bachelor of Science degree. The student must complete the required courses listed below and a selected group of electives in the field of his choice.

### FIFTH AND SIXTH YEARS

| <i>Fall</i>                    | <i>Sem.</i> |             | <i>Class</i> |  | <i>Spring</i>                   | <i>Sem.</i> |             | <i>Class</i> |  |
|--------------------------------|-------------|-------------|--------------|--|---------------------------------|-------------|-------------|--------------|--|
|                                | <i>Hrs.</i> | <i>Lab.</i> | <i>Hrs.</i>  |  |                                 | <i>Hrs.</i> | <i>Lab.</i> | <i>Hrs.</i>  |  |
| ME 301 Thermodynamics I        | 3           | 2           | 2            |  | ME 302 Thermodynamics II        | 3           | 2           | 2            |  |
| ME 315 M.E. Lab. #1            | 1           | 3           | 0            |  | ME 316 M.E. Lab. #2             | 1           | 3           | 0            |  |
| ME 343 Mechanisms              | 3           | 0           | 3            |  | ME 344 Mech. of Vibration       | 3           | 0           | 3            |  |
| ME 124 Mechanical Proc.        | 3           | 2           | 2            |  | ME 321 Fluid Mechanics          | 3           | 0           | 3            |  |
| ME 307 Mech. of Materials II   | 3           | 0           | 3            |  | ME 311 Machine Elements         | 3           | 0           | 3            |  |
| M 231 Linear Algebra <i>or</i> |             |             |              |  | M 301 Linear Analysis <i>or</i> |             |             |              |  |
| M 303 Adv. Calculus I          | 3           | 0           | 3            |  | M 304 Adv. Calculus II          | 3           | 0           | 3            |  |
| Social Studies <i>or</i>       |             |             |              |  | Social Studies <i>or</i>        |             |             |              |  |
| Philosophy Elec.               | 3           | 0           | 3            |  | Humanities Elective             | 3           | 0           | 3            |  |

### SEVENTH AND EIGHTH YEARS

|                          |   |   |   |                           |   |   |   |
|--------------------------|---|---|---|---------------------------|---|---|---|
| ME 312 Mechanical Design | 3 | 0 | 3 | EE 336 Instrum. Electron. | 3 | 0 | 3 |
| ME 322 Gas Dynamics      | 3 | 0 | 3 | PH 323 Physics IV         | 3 | 0 | 3 |
| ME 401 Systems Analysis  | 3 | 0 | 3 | ME 416 M.E. Lab. #4       | 1 | 3 | 0 |
| ME 415 M.E. Lab. #3      | 1 | 3 | 0 | ME 512 Senior Seminar     | 3 | 0 | 1 |
| ME 404 Heat Transfer     | 3 | 0 | 3 | Restricted Elective       | 3 | 0 | 3 |
| Restricted Elective      | 3 | 0 | 3 | Free Elective             | 3 | 0 | 3 |

### Selection of Electives

Restricted Electives are to be chosen from available courses in Engineering, Mathematics, or Science.

**TOTAL**—Bachelor of Science Degree in Mechanical Engineering: 140 Semester Hours.

## Extension Credit Division Programs

### POLICE SCIENCE AND ADMINISTRATION

(Associate in Science)

The Associate Degree Program in Police Science and Administration has the two-fold objective of preparing students to be proficient in the many aspects of police work and, at the same time, of providing a basic core of general college studies. Open to private or public law enforcement officers only.

Students will complete 33 credits in general studies courses and 27 credits in specialized police courses.

| <i>First Semester</i>   |                                 | <i>Sem.<br/>Hrs.</i> | <i>Second Semester</i> |                                    | <i>Sem.<br/>Hrs.</i> |
|-------------------------|---------------------------------|----------------------|------------------------|------------------------------------|----------------------|
| *E 113                  | English Composition .....       | 3                    | BA 113                 | Business Finance .....             | 3                    |
| E 114                   | Speech .....                    | 3                    | P 111                  | Psychology .....                   | 3                    |
| PA 101                  | Forensic Laboratory .....       | 3                    | PA 103                 | Police Org. & Admin. I .....       | 3                    |
| <i>Third Semester</i>   |                                 |                      | <i>Fourth Semester</i> |                                    |                      |
| PA 104                  | Pol. Org. & Admin. II .....     | 3                    | PA 221                 | Applied Police Psychology .....    | 3                    |
| PA 106                  | Police Supervision .....        | 3                    | SP 101                 | Conversational Spanish I .....     | 3                    |
| SS 113                  | Sociology .....                 | 3                    | SS 121                 | Political Science I .....          | 3                    |
| <i>Fifth Semester</i>   |                                 |                      | <i>Sixth Semester</i>  |                                    |                      |
| E 201                   | Humanities I .....              | 3                    | E 202                  | Humanities II .....                | 3                    |
| SP 102                  | Conversational Spanish II ..... | 3                    | PA 215                 | Prin. of Investigation w/lab ..... | 3                    |
| SS 122                  | Political Science II .....      | 3                    | PA 217                 | American Legal System I .....      | 3                    |
| <i>Seventh Semester</i> |                                 |                      |                        |                                    |                      |
| PA 218                  | American Legal System II .....  | 3                    |                        |                                    |                      |
| PA 221                  | Juvenile Delinquency .....      | 3                    |                        |                                    |                      |

\* Entrance into this course is permitted upon satisfactory performance on the placement examination.

TOTAL Required for the Associate in Science Degree: 60 Semester Hours.

For those interested in continuing their studies, the Associate in Science Program in Police Science and Administration is applicable to the first two years of the Bachelor of Science in Business Administration Program with a major in Public and Social Administration.

## ENGINEERING—Groton, Connecticut

### (Bachelor of Science)

This is a Junior and Senior year evening program given at Groton, Connecticut, leading to the Bachelor of Science degree in Engineering. It is open to all qualified students possessing the equivalent of a two year Associate in Science degree in Engineering. Admission: Applicants must be graduates of an accredited high school or possess a Connecticut High School Equivalency Certificate acceptable for admission to New Haven College. They will be accepted by college transfer credit, if satisfactory, based upon the successful completion of the first two years of an engineering program or equivalent. If the applicant is sponsored by a company, a letter of recommendation is required.

Curriculum: A total of 70 semester hours is required.

Tuition: \$80.00 per 3 semester hour course, which includes registration fees.

Textbooks are available at the College Bookstore and at the opening of the class.

### Program

| <i>Course</i>       | <i>Second Term</i>                         | <i>Sem.<br/>Hrs.</i> | <i>Course</i>      | <i>First Term</i>         | <i>Sem.<br/>Hrs.</i> |
|---------------------|--------------------------------------------|----------------------|--------------------|---------------------------|----------------------|
| *M 317              | Calculus Review                            | 3                    | M 203              | Calculus III              | 3                    |
| *EE 223             | Prin. of Elect. Engin. I                   | 3                    | *EE 224            | Prin. of Elect. Engin. II | 3                    |
| IE 204              | Engineering Economics                      | 3                    | ME 202             | Mechanics of Materials I  | 3                    |
| <i>Third Term</i>   |                                            |                      | <i>Fourth Term</i> |                           |                      |
| EE 336              | Instrum. Electronics                       | 3                    | ME 307             | Mechanics of Materials II | 3                    |
| MT 219              | Physical Metallurgy<br>(Hammond Lab.-Yale) | 3                    | ME 301             | Thermodynamics I          | 3                    |
| M 204               | Diff. Equations                            | 3                    | ME 343             | Mechanisms                | 3                    |
| <i>Fifth Term</i>   |                                            |                      | <i>Sixth Term</i>  |                           |                      |
| ME 302              | Thermodynamics II                          | 3                    | EE 235             | Electrical Machines       | 3                    |
| ME 344              | Mech. of Vibration                         | 3                    | ME 321             | Fluid Mechanics           | 3                    |
| **ME 315-316        | M.E. Labs I & II<br>(On Campus)            | 2                    | ME 311             | Machine Elements          | 3                    |
| <i>Seventh Term</i> |                                            |                      | <i>Eighth Term</i> |                           |                      |
| ME 406              | Hydrodynamics                              | 3                    | SS 121             | Political Science         | 3                    |
| ME 404              | Heat Transfer                              | 3                    |                    | (Federal Government)      |                      |
| **ME 415-416        | M.E. Labs III & IV<br>(On Campus)          | 2                    |                    | Restricted Technical      |                      |
| <i>Ninth Term</i>   |                                            |                      |                    | Electives                 | 6                    |
| ME 512              | Senior Seminar                             | 3                    |                    |                           |                      |
| PHL 111             | Intro. to Problems of<br>Philosophy        | 3                    |                    |                           |                      |
|                     | Restricted Technical<br>Elective           | 3                    |                    |                           |                      |

\* If these courses are required, add 9 hours to the program.

\*\* Carry 3 semester hour cost.

### Selection of Electives

Restricted Electives totaling 9 semester hours are required in addition to the 58 semester hours of specific course requirements. Further information is available from the office of the Evening and Extension Director.

TOTAL required for the Bachelor of Science degree: 70 Semester Hours.

## Description of Courses

Courses bearing hyphenated numbers, for example, A111-112, are two semesters in length, and the first semester is prerequisite to the second.

Courses bearing single numbers, for example, L 221, are only one semester in length.

Courses designated by letter rather than by number are not of college grade, although they involve class and preparation time equivalent to other courses.

Courses of the 100 level have no prerequisites; 200-level courses have one prerequisite; 300-level courses have two prerequisites; 400-level courses have three or more prerequisites, or are to be taken in the final two years of a bachelor of science program.

### Accounting

#### **A 111-112. Introductory Accounting. Credit, 6 semester hours.**

This course, which is prerequisite to all other courses in accounting, familiarizes the student with fundamental principles of accounting. This work is supplemented by progress tests, problems, and systematic practice work. The fields of study covered include: interpretation of assets, liabilities, and net worth; preparation of statements; books of original entry; ledgers; and work at the end of a fiscal period.

(Offered also in Spring Semester on a two nights per week basis.)

#### **A 113. Industrial Accounting. Credit, 3 semester hours.**

*(This course cannot be taken by accounting and business administration majors.)*

This is a basic course designed to acquaint engineering students with the vocabulary of accounting, the accounting cycle and the presentation of accounting statements.

#### **A 221-222. Intermediate Accounting. Credit, 6 semester hours.**

Prerequisite: A111-112.

This course is a continuation at a more advanced level of the principles studied in Introductory Accounting. It is intensive and adapted to present-day changes in the accounting profession. The subject matter includes: the corporation, asset valuations, liabilities, installment sales and consignments, analysis and interpretation of financial statements, sources and application of funds, depreciation methods, inventory evaluation, reserves, and surplus analysis. There is considerable practice in the form of problem solutions. Reference is made to the publications of the professional accounting societies.

#### **A 223-224. Cost Accounting. Credit, 6 semester hours.**

Prerequisite: A111-112.

This course embraces the study of departmental and process cost accounting, specific order cost accounting, and standard costs. Thorough consideration is given to cost elements of material, labor, and manufacturing expense. Also included is the study of cost estimating, budgets in cost control, cost relationships, and cost reports for use of management. Forms and methods used in standard costs and analyses of variances for operational use are considered. Practical application of the principles studied is given through the working of practice sets and problems.

#### **A 331-332. Advanced Accounting. Credit, 6 semester hours.**

Prerequisite: A 221-222.

This is the final general accounting course covering all phases of accounting not previously covered and not considered of a specialized nature. This course is given in two sections, neither section being dependent upon the other. Upon completion of these sections, the student is prepared for advanced study in specialized accounting problems.

#### **A 333-334. Auditing. Credit, 6 semester hours.**

Prerequisite: A 221-222, may be taken concurrently.

The course includes examination of the financial condition, review of operations, preparation of audit program, audit working papers, and report upon examination of the client's business. The accountant's relationship with the client and the ethics of the profession are thoroughly discussed. A complete laboratory test is worked out to supplement the text study. Recent developments in audit procedure are included, systems in internal check analyzed, comparisons of balance sheets and detailed audits made. A background is developed in the theory of auditing in preparation for the C.P.A. examination.

**A 335-336. Income Tax Procedure. Credit, 6 semester hours.**

Prerequisite: A 221-222 recommended; A 111-112 required.

This course embraces a practical application of the principles of Federal Income Tax Law to concrete situations. The problems include the preparation of corporation, fiduciary, partnership, and individual tax returns; claims for refunds, credit, and abatement; records, reports, and requirements of Social Security and state and federal unemployment taxes; and the proper accounting procedure for tax records.

**A 443. Accounting Systems I. Credit, 3 semester hours.**

Prerequisites: A 224 and A 332.

This course deals with the principles and practices applied in developing accounting systems. Such topics are covered as the preliminary survey; principles of internal check; systems for handling cash, receivables, purchases, sales and payrolls; special journals, ledgers, and statements.

**A 444. Accounting Systems II. Credit, 3 semester hours.**

Prerequisite: A 443.

A continuation of Accounting Systems I in which the principles studied are observed and analyzed through field trips to businesses and institutions which can best demonstrate the various types of accounting systems. The student is taught how to develop and adapt accounting systems according to the needs of different operations.

## Art

**ART 101-102. Drawing and Painting I and II. Credit, 6 semester hours.**

This course is an introduction to the basic fundamentals of drawing and painting. Problems in drawing will alternate throughout the year with painting projects. The student will thus be given time to assimilate his experience in the preceding problem while working in the alternate medium. Drawing will include exercises to develop coordination of hand and eye, drawing various objects in correct perspective and study of the human figure, its volumes, shifting axes and action. Special emphasis will be given to the exploitation of line as a means of articulating the structure of forms and space.

**ART 111-112. Design I and II. Credit, 6 semester hours.**

This is a basic art course in which the student is introduced to the visual elements of art: texture, line, color, shape, and space and the factors which affect their organization in visual design. The study of design is given in an elementary non-representational manner. Emphasis will be given to the study of color.

**ART 122. Layout and Printing Techniques. Credit, 3 semester hours.**

This course covers the various advertising art techniques of layout, lettering and design, in relation to printing methods used today in graphic media.

**ART 131. History of Art to the Renaissance. Credit, 3 semester hours.**

This is a course which seeks to explore world art as an expressive and social phenomenon as it develops from its earliest beginnings, through religious and cultural cycles, and ending with the visual developments of the Renaissance.

**ART 132. History of Modern Art. Credit, 3 semester hours.**

This is a course which seeks to explore the art of the twentieth century in Europe and America, its roots in the past, and its function as an expression of our contemporary civilization.

**ART 201-202. Drawing and Painting III & IV. Credit, 6 semester hours.**

Prerequisite: Art 101-102.

This course is a continuation of Drawing and Painting I and II and endeavors to elaborate and perfect the techniques developed in the basic course.

**ART 203. Commercial Art I. Credit, 3 semester hours.**

A course dealing with problems of graphic arts and advertising. Relations between the arts and methods of communications are explored. An introduction to the fields of advertising, illustration, and editorial art; the role of the advertising agency; and the analysis of ideas for visual statement are emphasized.

**ART 204. Commercial Art II. Credit, 3 semester hours.**

The organization and presentation of a project which demonstrates the student's ability to apply theory on a professional level. Work for presentation in the form of a portfolio is developed through individual instruction and criticism.

**ART 211. Lettering. Credit, 3 semester hours.**

Prerequisite: Art 111.

This course covers the design and execution of basic hand lettering with pen and brush. The student will also study the utilization of hand lettering and type in the design of printed matter. Emphasis will be put on the use of letter forms as an element of visual design.

## **Business Administration**

**BA 101-102. Business Law. Credit, 6 semester hours.**

This course involves a study of basic principles of the law of contracts, agency, partnerships, limited partnerships, and corporations.

Contracts will involve a study of the formation of contracts, capacity of parties, offer and acceptance, performance, and discharge. Agency will deal with the appointment of agents, the relationship of principal and agent, power of the agent to bind his principal, duties of agent and principal to one another and to third parties.

Business associations will involve a study of the law relating to the formation and operation of the usual types of business organization. Also considered is the legal relationship among the individuals within the business organization as well as their relationship with third parties.

**BA 105. Principles of Marketing. Credit, 3 semester hours.**

A study of the fundamental functions of marketing involving the basic principles of the flow of goods and services from producer to consumer. Marketing methods, policies, and problems of the manufacturer, wholesaler and retail dealer are reviewed through analysis of channels of distribution, price policies, competition, and market information.

**BA 106. Principles of Selling. Credit, 3 semester hours.**

This course presents definite techniques and basic principles of selling and how to get along with people. It includes the study of: prospect selection, knowledge of the product, pre-approach and approach, demonstration, meeting objections, close and departure. Desirable personality traits of the salesman are considered. Class demonstrations and creative salesmanship are stressed.

**BA 107. Principles of Advertising. Credit, 3 semester hours.**

Prerequisite: BA 105 or equivalent.

Advertising practice, the principles underlying it, and the effect of advertising on the public. The nature and problems of production in planning the advertising campaign, the mechanics used in constructing advertisements, visualization, layout, copy, printing and engraving processes, and typography.

**BA 108. Advertising Management. Credit, 3 semester hours.**

Prerequisite: BA 107.

Covers the efficient use of advertising from the management point of view, as developed in actual business cases. Subjects include: use of advertising to stimulate demand, building of advertising programs, advertising agency relations, advertising budgets, and coordinating sales and advertising.

**BA 113. Business Finance. Credit, 3 semester hours.**

After a brief study of the unincorporated business enterprise, the modern corporation is studied. The topics covered are: basic security types of stocks and bonds, capital structure, promotion, investment banking, government regulation, administration, sources and uses of working capital, expansion, combinations, mergers, refinancing and recapitalization, failure and reorganization.

**BA 118. Mathematics of Finance. Credit, 3 semester hours.**

Prerequisite: M 115-116 or equivalent.

A study of financial formulae and tables designed to enable a financial analyst to evolve the facts necessary for his decisions. These include compound interest, present values, annuities, amortization, sinking funds, stock and bond yields and values, depreciation, and the use of mortality and commutation tables for determining premiums and values of various types of life annuities and life insurance.

**BA 119. Office Organization and Management. Credit, 3 semester hours.**

This course considers the profession of office supervision and management through the study of the following: functions of the office manager, office organization, departments, methods and systems, costs and budgets, the role of electronic data processing.

**BA 131. Public Relations. Credit, 3 semester hours.**

This course deals with the main principles of public relations, and how they are applied in specific cases. It shows how the practice of public relations is used by individuals, groups, companies and organizations to gain public understanding and acceptance, and to improve their relations with everyone in a position to affect their welfare. One of the course requirements is a paper evaluating a public relations program.

**BA 203. Principles of Transportation. Credit, 3 semester hours.**

Prerequisite: EC 133-134.

The economics of transportation development. Problems of freight service, passenger service, carrier management and organization, rate making and rate structures. Problems of regulations of transportation policy.

**BA 216. Business Statistics. Credit, 3 semester hours.**

Prerequisite: M115-116 or equivalent.

This course emphasizes a behavioristic approach to statistics. Stress is laid not on the gathering of statistical information, but on how such information, once collected, is used by the businessman.

Major topics include statistical populations, parameters for decision, sample selection and distribution, probability theory, risk and uncertainty in estimation and testing problems, data flow, and error and bias occurring in either sampling or procedures.

**BA 221. Law of Sales. Credit, 3 semester hours.**

Prerequisite: BA 101-102.

Offered in September of ODD years.

This course is an advanced study of Business Law comprising: bailments; duties and liabilities of bailees, common carriers, and warehousemen; the laws governing the rights of parties engaged in the transfer of personal property. Questions of title, risks assumed, rights of creditors, express and implied warranties, buyers' and sellers' remedies, together with the business background out of which such relations arise, are also considered.

**BA 222. Law of Commercial Paper and Bankruptcy. Credit, 3 semester hours.**

Prerequisite: BA 101-102.

Offered in February of EVEN years.

This course is a study of the Negotiable Instruments Law, dealing with negotiable promissory notes, bills of exchange and bank credits with an analysis of their form and function in commercial transactions. A brief survey of bankruptcy procedure under the federal bankruptcy laws is included.

**BA 301. Retailing. Credit, 3 semester hours.**

Prerequisite: BA 105.

Modern merchandising methods used by retail stores, including store organization, buying, pricing, receiving, marketing, publicity, selling, record keeping and stock control.

**BA 302. Industrial Marketing. Credit, 3 semester hours.**

Prerequisite: BA 105.

Practices and policies in the distribution of industrial goods, including purchasing practices, market analysis, channels of distribution, distribution and pricing policies, competitive practices and operating costs.

**BA 312. International Marketing. Credit, 3 semester hours.**

Prerequisite: BA 105.

Principles of International Marketing: the theory of trade and commercial policy; foreign exchange rates, exchange control, and foreign investments; world trade in commodities and methods of exporting and importing.

**BA 315. Marketing Management. Credit, 3 semester hours.**

Prerequisite: BA 105.

Policies, practices and problems in the field of marketing management: product development; product planning for promotion; market investigation, quantitative and qualitative; pricing and price policies; planning the marketing effort; and control of marketing operations.

**BA 316. Sales Management. Credit, 3 semester hours.**

Prerequisite: BA 105-106.

The problems and resulting policies encountered in the management of a sales organization. A study of the qualifications and the duties of the sales manager; departmental organization; recruiting, selecting, training, stimulating, supervising, compensating and routing salesmen; and territories, quotas, expenses, promotion, and policies.

**BA 342. Marketing Research. Credit, 3 semester hours.**

Prerequisites: BA 105 and BA 216.

The focus of this course is on the use of qualitative and quantitative analysis of the markets in which business operates.

The following problems will be considered: sales analysis, advertising research, product planning and analysis, sources of data and methods of their collection, sampling techniques, methods of tabulation and analysis, methods of organizing and conducting marketing research, budget considerations, etc., with outside readings and term reports.

**BA 350. Quantitative Marketing Analysis. Credit, 3 semester hours.**

Prerequisites: BA 105 and BA 216.

This course covers the utilization of Quantitative Analysis, and model building in determining marketing opportunities, in managing marketing activities, in planning marketing programs, and in controlling the marketing effort. Case studies, several of which require operations research and behavioral science concepts, are analyzed.

**BA 510. Business Management. Credit, 3 semester hours.**

Prerequisites: BA 113 and BA 216.

This course emphasizes and identifies business problems in the planning, feedback and control areas; special attention is given to differential cost analysis and financial planning. The development of decision making requires analysis of the lines of interaction between department activities. Logical analysis of quantitative and qualitative information for decision making is emphasized. Profit planning is stressed.

**BA 512. Business Seminar. Credit, 3 semester hours.**

*Open to Seniors in Business Administration only.*

A seminar course in which the various disciplines are integrated by the student. This course will be conducted on a seminar basis and the student is expected to conduct an independent research project in depth in the area of his major.

## Chemistry

**CH 101-102. General Chemistry w/Lab. Credit, 8 semester hours.**

This is an introductory course in inorganic chemistry which deals with elements, compounds, reactions, atomic structure, chemical bonding, nuclear reactions and equilibrium. Emphasis is placed on accurate laboratory work.

Laboratory and Breakage Fee: \$15.00 per semester.

**CH 211-212. Quantitative Analysis w/Lab. Credit, 8 semester hours.**

Prerequisite: CH 101-102.

The theory and laboratory training in the preparation of solutions, volumetric and gravimetric analysis, and the use of special laboratory instruments is stressed in this course.

Laboratory and Breakage Fee: \$15.00 per semester.

**CH 301-302. Organic Chemistry w/Lab. Credit, 8 semester hours.**

Prerequisite: CH 101-102.

This course covers resonance and molecular orbital theory, and emphasizes basic organic reactions as they apply to synthetic procedures. Laboratory work closely follows the lecture in illustrating the application of these reactions.

Laboratory and Breakage Fee: \$15.00 per semester.

**CH 321-322. Plastics and Polymer Chemistry. Credit, 6 semester hours.**

Prerequisite: CH 101-102.

A study of all phases of the plastics and polymers field, including the chemistry involved, methods, properties of the plastics, and the uses of the various materials.

**CH 341-342. Instrumental Methods of Analysis. Credit, 6 semester hours.**

Prerequisite: CH 101-102.

The theory of instrumental methods such as colorimetry, spectrophotometry, chromatography, and polarography will be studied. The demonstration of various instrumental methods will also be included.

**CH 351. Qualitative Organic Chemistry w/Lab. Credit, 2 semester hours.**

Prerequisite: CH 301-302.

This is one semester course, primarily a laboratory course dealing with the systematic identification of organic compounds.

Laboratory and Breakage Fee: \$15.00 per semester.

**CH 401-402. Advanced Organic Chemistry. Credit, 6 semester hours.**

Prerequisite: CH 301-302.

The first semester of this course deals with advanced topics in synthetic organic chemistry including topics in the chemistry of heterocycles, alkaloids, and steroids. The second semester concentrates on physical organic chemistry, specifically the mechanisms of organic reactions.

**CH 410-411. Biochemistry w/Lab. Credit, 8 semester hours.**

Prerequisite: CH 101-102.

This course is designed to acquaint the student with the isolation, structure, biosynthesis, metabolic reactions, and interdependence of the more important chemical compounds present in all living organisms. Elementary aspects of physical chemistry, biophysics, and special analytical procedures are discussed where they are applicable.

Laboratory and Breakage Fee: \$15.00 per semester.

**CH 421-422. Advanced Inorganic Chemistry. Credit, 6 semester hours.**

Prerequisite: CH 101-102.

A presentation of modern structural concepts, reaction mechanisms, and bonding concepts in inorganic chemistry.

**CH 431-432. Physical Chemistry w/Lab. Credit, 8 semester hours.**

Prerequisites: CH 101-102, PH 201-202, M 204.

Fundamental laws of gases, thermodynamics, the theory of atomic and molecular structure, kinetics, and phase equilibria are included in this course. Laboratory work enables the student to evaluate this subject by studying physical and chemical data.

Laboratory and Breakage Fee: \$15.00 per semester.

## Economics

**EC 133. Principles of Economics I. Credit, 3 semester hours.**

The foundations of economic analysis, including the foundations of economic progress; resources, technology, private enterprise, profits and the price system. An intensive study of macroeconomics including national income, employment and economic growth. A study of price levels, money and banking, the Federal Reserve System, theory of income, employment and prices, business cycles and problems of monetary, fiscal and stabilization policy.

**EC 134. Principles of Economics II. Credit, 3 semester hours.**

Prerequisite: EC 133.

A study of microeconomics including markets and market structure and the allocation of resources. The distribution of income, the public economy, the international economy and current economic problems are investigated.

**EC 211. Government Regulation of Business. Credit, 3 semester hours.**

Prerequisite: EC 133.

This course deals with an appraisal of public policy toward transportation, trusts, monopolies, public utilities, and other forms of government regulation of economic activity.

**EC 214. Public Finance. Credit, 3 semester hours.**

This course stresses the theory and practice of public taxation. Emphasis is placed on the budgetary process at all levels of government.

**EC 236. Money and Banking. Credit, 3 semester hours.**

Prerequisites: EC 133-134 or EC 204.

This course deals with the nature and functions of money, commercial banking system, Federal Reserve System and the Treasury, monetary theory, financial institutions, international financial relationships, history of money and monetary policy in the United States, and current problems of monetary policy.

**EC 240. Economics of Labor Relations. Credit, 3 semester hours.**

Prerequisite: EC 133-134.

A study of the history of the union movement in the United States, union structure and government, problems of collective bargaining, economics of the labor market, wage theories, unemployment, governmental policy and control, problems of security.

**EC 442. Economic Thought. Credit, 3 semester hours.**

Prerequisite: EC 133-134.

This course describes the development of economic doctrine from mercantilism and Adam Smith to the thinking of modern-day theorists. The emphasis is placed upon the main currents of thought with the applicability to present-day problems. Individual study and reporting are stressed during the semester.

**EC 445. Economic Analysis. Credit, 3 semester hours.**

Prerequisites: EC 133-134 and EC 236.

Economic Analysis will stress value and distribution theory. Simple geometric tools and equations, introduction to linear programming and econometrics will be introduced to the student. The analysis is related to actual problems in order to make the analysis more real without diluting the theory. The area will include consideration of market structure, theories of production, nature and behavior of cost, price and output determination under various conditions, theory of factory price and income distribution, wage determination, capital goods and investment decisions, theory of interest, rent, and profits.

## Electrical Engineering

**EE 223-224. Principles of Electrical Engineering. Credit, 6 semester hours.**

Prerequisites: PH 108 and M 118.

Introduction to basic concepts in modern network theory and network techniques in analyzing simple and complex electric circuits. Definitions of current voltage relations, circuit elements, resistance, inductance, and capacitance. Circuit equilibrium equations, transformation, Kirchoff's laws, network theorems, passive and active networks, superposition. Thevenin's and Norton's theorem, d-c transients, solution of simple electric circuits in the sinusoidal steady state by vector and complex algebra. Impedance, capacitance, and resonance concepts, single phase alternating currents and voltages, power relations. Electron devices, diodes, triodes and transistors, amplifiers, equivalent circuits and applications. Magnetic fields and circuits, electromechanical energy conversion.

**EE 235. Electrical Machines. Credit, 3 semester hours.**

*This course cannot be taken for credit by electrical engineering students.*

Prerequisite: EE 223-224.

Analysis of basic electric phenomena to fulfill the conversion of energy. General form of the machine: windings, voltage relations, magnetic-field relations, energy losses, energy flow, efficiency, ratings and basic torque relations are covered. This is followed by the application of these basic principles and relations to the detailed analysis of the performance of the different types of machines.

**EE 252. Illumination. Credit, 3 semester hours.**

Prerequisite: EE 223-224.

This course covers the basic concepts of illumination engineering; light sources; photometry; seeing; principles of illumination; illumination calculations; interior lighting; flood lighting; sports, street, highway lighting; interior wiring for light and power.

**EE 330. Introduction to Automation. Credit, 3 semester hours.**

Prerequisites: EE 336 and M 204.

This course covers the fundamental principles of automation for industrial engineers. It provides an introduction to the mathematics and techniques of automation for non-electrical engineers as well as a firm foundation in mathematics, physics, chemistry and technology for electrical engineers who plan to pursue the subject further. Problems and equipment demonstrations will accompany class assignments.

**EE 331-332. Alternating Current Circuits. Credit, 6 semester hours.**

Prerequisites: EE 223-224 and M 204.

Review of basic circuit theory. Loop and nodal equations and methods of solution. Matrix notation. General network theorems. Input and transfer admittances, impedances and transfer functions. Symmetrical component analysis. Three-phase circuits, balanced and unbalanced. Other polyphase circuits. Fourier series and integrals. Fourier and LaPlace transforms, direct and inverse. Operational methods applied to transients in linear systems.

**EE 336. Instrumentation Electronics. Credit, 3 semester hours.**

*This course cannot be taken for credit by electrical engineering students.*

Prerequisite: EE 224.

An introduction into instrumentation electronics aiming to provide a working knowledge and understanding of electronic instruments and controls as used in industrial processes. Starting with simple electrical measurements, the course subsequently deals with power supplies, transistor and vacuum tube amplifiers and oscillators. Practical servo systems and operational amplifiers are treated as well as simple circuits for electronic switching, timing and digital counting.

**EE 343-344. Electrical Machines. Credit, 8 semester hours.**

(With laboratory periods each semester.)

Prerequisite: EE 224.

Processes for the electro-mechanical conversion of energy. The fields, forces, and torques in magnetic systems. Theory, characteristics, applications, and design of direct-current machines. Theory, performance, and applications of transformers, AC generators, synchronous motors, single and polyphase induction motors. The laboratory experiments and problems cover analysis of DC and AC networks by loop and nodal equations and methods of solutions. Matrix notation. Experimental verification of network theory and its application to electrical machines.

**EE 345. Automatic Control Theory and Practice. Credit, 3 semester hours.**

Prerequisites: EE 336 or EE 347 and M 204.

This course covers the fundamentals of automatic control and the simulation of control systems as applied to electrical, mechanical, hydraulic and pneumatic systems found in the scientific, military, and industrial fields. Covered are analysis and representation of system dynamics by block diagrams and LaPlace transforms, transient and frequency response analysis, open and closed loop analysis, tuning of control systems, and stability criteria. Laboratory sessions using the analog computer provide students with first-hand experience with the principles used in automatic control systems.

**EE 347-348. Electronic Engineering. Credit, 8 semester hours.**

(With laboratory periods each semester.)

Prerequisite: EE 224 or EE 331-332. (EE 331-332 may be taken concurrently.)

This course is largely concerned with the discussion of basic circuits making up more complex electronic devices. A large part of the course is assigned to the analysis of apparatus used in practice, both in industry and communications. Magnetic, audio and servo amplifiers as well as high-frequency systems will be analyzed during the second semester.

**EE 351-352. Engineering Analysis. Credit, 6 semester hours.**

Prerequisites: EE 224 and M 303. (M 303 may be taken concurrently with EE 351.)

A study of the analytical approach to the solution of electrical engineering problems. Review of differential equations and systems applications. Circuit response to special functions. Dual networks. Electrical analogues to mechanical systems. Fourier methods and applications in linear systems. Transfer functions and system response by LaPlace transforms. Convolution and superposition integrals.

Introduction to the concept of matrices and their application to modern electrical circuits and system phenomena. The theory of n-port and n-terminal networks. Their synthesis and analysis from the admittance matrix viewpoint, using RLC networks, transformers, negative-impedance converters, and gyrators.

**EE 429. Measuring Principles and Transducers. Credit, 3 semester hours.**

Prerequisites: EE 336, M 204, EE 330 or EE 351-352.

This course covers the principles of measuring elements and transducers for electrical engineers. Mechanical and industrial engineers who have the necessary prerequisites will also be able to profit from the course. It provides an introduction to the science of measurement (metrology), and the application of this science to the measurement of quantities of economic value in industrial, military and scientific processes. Laboratory sessions will provide the student with first-hand familiarization with the principles of the subject.

**EE 437. Industrial Power Systems Engineering. Credit, 3 semester hours.**

Prerequisite: EE 331-332.

Structure of power and distribution of systems; symmetrical components; analysis of unbalanced polyphase power systems; fault calculations; applications to problems of grounding, relaying and unbalanced operation of apparatus.

**EE 438. Electric Power Transmission. Credit, 3 semester hours.**

Prerequisite: EE 437 or EE 331-332.

This course considers the fundamentals of electric generation, transmission and distribution. Transient performances of non-linear characteristic circuits, and power system stability.

**EE 441. Electronic Analog Computers. Credit, 3 semester hours.**

Prerequisite: EE 347-348.

Elements of analog simulation, pulses and wave shapes, operational amplifiers, integrator, differentiator, constant multiplier and summer, solution of first-order differential equations and higher-order systems, formulating of signal flow-graphs. Application of computer to problems in engineering is stressed.

**EE 442. Electronic Digital Computers. Credit, 3 semester hours.**

Prerequisite: EE 347-348.

Fundamentals of switching circuits, number systems, Boolean algebra and its use in logical design techniques, switching theorems, minimization methods, coding, error detection and correction, storage elements, arithmetic operations, and system design of general purpose digital computer.

**EE 445-446. Communications Circuits. Credit, 6 semester hours.**

Prerequisite: EE 347-348.

This course includes the analysis of communication circuits and the design of the components of communication systems, performance testing of receivers, transmitters, power amplifiers and other elements of telephone, carrier current, telemetering, radio, microwaves and television equipment.

**EE 450. Transistor Electronics. Credit, 3 semester hours.**

Prerequisite: EE 331-332.

This course includes the theory of semiconductors, and the properties of semiconductor devices; characteristics of point contact and junction transistors; the four-terminal networks, equivalent circuits, stability, power gain and cascading problems. Low frequency amplifiers. High frequency circuits, high frequency amplifiers. Application of semiconductor devices in amplifiers, oscillators, magnetic amplifiers and computers.

**EE 451. Advanced Topics in Semiconductors. Credit, 3 semester hours.**

Prerequisite: EE 450.

A study of negative resistance devices and circuits for use as elements in switching circuits. Basic theory of negative-impedance devices, transistors as switches, transient analysis and characteristics, transient calculations, saturation effects, avalanche mode switching, tunnel diodes: characteristics, multivibrators, logic and hybrid circuits. Silicon controlled rectifiers: theory, ratings and characteristics, triggering, series and parallel operation, static switching circuits, choppers, inverters and cyclo-converters. Regulated power supplies.

**EE 455-456. Servomechanisms and Feedback Control Systems. Credit, 6 semester hours.**

Prerequisite: EE 351-352.

This course includes the differential equations of dynamical systems, analogues, linearization techniques, block diagram representation, concept of transfer function, classical servomechanisms, transient analysis and synthesis, frequency spectrum analysis and synthesis, sta-

bility criteria, transfer loci, compensation methods, use of inverse plane. Bode plot, straight line approximations, gain-phase relationships, Nyquist plots and root-locus technique. Correlation between root-locus and frequency loci, compensation using root-locus, multiple loop systems, block diagram reduction techniques, multipole systems, and the use of describing function for linearization.

**EE 461. Waves and Fields. Credit, 3 semester hours.**

Prerequisite: EE 331-332.

This course covers the study of basic electromagnetic theory as related to the static fields of electric charges and the magnetic fields of steady electric currents. Included are fundamental field laws. Maxwell's equations; energy distributions; scalar and vector potentials; method of images; boundary relations; magnetization; polarization; time varying electric and magnetic fields; field plotting. Vector mathematics is used in the mathematical analysis.

**EE 462. Microwave Fundamentals. Credit, 3 semester hours.**

Prerequisite: EE 461 or EE 331-332.

This course covers the development and application of electromagnetic-field theory to the analysis of high-frequency circuits, wave propagation, reflection in various media including wave-guides, and resonant cavities. Also included is the theory of operation of such devices as klystrone, magnetron, and traveling wave tubes.

**EE 500. Seminar in Transistor Electronics. Credit, 3 semester hours.**

*Open to Seniors in Electrical Engineering only.*

Prerequisite: Consent of instructor.

Special advanced engineering problems in the transistor field. Arranged to suit the interest and requirements of the student. Under the supervision of a staff member.

**EE 504. Laboratory Thesis. Credit, 3 semester hours.**

*Open to Seniors in Electrical Engineering only.*

Prerequisite: Consent of instructor.

Advanced laboratory testing and special problems. The student works on problems of his own selection which have been approved by the instructor. The student's work may be in the form of a semester thesis or a series of original experiments.

## English

**EA Basic Grammar. One semester. No credit.**

This course is designed for people who do not meet the English requirements for admission to the College. It provides a review of the fundamental structures of the English language. Practice is given in writing and speaking as well as in grammar.

**EB. Reading Laboratory. One semester. No credit.**

This course aims at helping the student to read faster and to increase comprehension. The objectives are more effective study habits, increased vocabulary, the enjoyment of reading and the development of independent thinking. The course includes reading and exercises in the text, vocabulary exercises, supervised reading for speed, training films and discussion.

**EF. English for Foreign Students. One semester. No credit.**

This course is designed for foreign-born students whose English is inadequate to pursue an education. The objective of the course is to increase the student's command of English sufficiently for him to do college level work.

**E 113. English Composition. Credit, 3 semester hours.**

Prerequisite: Satisfactory performance on English Placement Examination, either at admission or at the completion of EA Basic Grammar.

This course is designed primarily to help students learn to write by writing—to develop the ability to organize thoughts quickly and effectively, to write with speed and facility, and to use simple written English.

**E 114. Speech. Credit, 3 semester hours.**

This course aims to establish a disciplined approach to oral communication. The objectives are to develop proficiency in locating, organizing, and presenting material, and to help the student gain confidence and fluency when speaking extemporaneously.

**E 131-132. Introduction to the Theater I and II. Credit, 6 semester hours.**

This course is designed to establish the general patterns of the physical theater during the early Grecian period, the age of Elizabeth, and the modern period. The theory of play production will be explained and several field trips to local theaters will be undertaken.

**E 141-142. Play Acting and Production I and II. Credit, 6 semester hours.**

The aim of this course is to give the student a general introduction to all phases of play production. The course is designed to furnish theory to those students interested in practical theater work at New Haven College.

**E 201-202. Humanities I and II. Credit, 6 semester hours.**

Prerequisite: E 113.

An approach to man's perennial search to find meaning for his place in the universe and perspective for his systems of knowledge. The student is introduced to the works of representative authors from Homer to Dante whose ideas provide the foundations of contemporary culture.

**E 206. English Composition and Literature. Credit, 3 semester hours.**

Prerequisite: E 113.

This course aims to increase the student's understanding of English as a means of communication and to increase his skill in reading and writing. Training is given in the analysis and interpretation of literature.

**E 211. Survey of English Literature I. Credit, 3 semester hours.**

A survey of English Literature and its historical and social backgrounds from its beginning to the Romantic period.

**E 212. Survey of English Literature II. Credit, 3 semester hours.**

A survey of English Literature and its historical and social backgrounds from the Romantic period to the present.

**E 213. Survey of American Literature I. Credit, 3 semester hours.**

This course is a survey of the historical and intellectual currents shaping the lives, thought, and writings of major American authors from the Puritan period to World War I, with emphasis on Poe, Melville, Hawthorne, Emerson, Thoreau, Whitman, Twain, Henry James, and Crane.

**E 214. Survey of American Literature II. Credit, 3 semester hours.**

This course is a survey of the historical and intellectual currents shaping the lives, thought, and writings of major American authors from World War I to the present, with emphasis on poets: Sandburg, Frost, Eliot, Stevens, Moore; novelists: Lewis, Fitzgerald, Faulkner, Hemingway, Wolfe, and Steinbeck; and dramatists: O'Neill, Sherwood, and Williams.

**E 220. Technical Report Writing. Credit, 3 semester hours.**

Prerequisite: E 113.

Included in this course of writing for the engineering, management and business student are the study and analysis of the professional scientific paper, the preparation of reports on the technical and semi-technical level and an introduction to the principles of business letter writing. Emphasis is placed on the study and writing of the internal plant memorandum and report.

**E 242. Shakespeare. Credit, 3 semester hours.**

Prerequisites: E 113 and E 206.

This course is designed to introduce to the student Shakespeare's most representative comedies, history plays and tragedies and to enable him to examine intensively such works as *Twelfth Night*, *The Winter's Tale*, *Richard II*, *Henry IV*, *Henry V*, *Hamlet*, *Lear*, *Othello*, *Antony and Cleopatra*, *The Tempest* and the Sonnets. Emphasis will be placed on the tragedies.

## Foreign Languages

**FR 101-102. Elementary French. Credit, 6 semester hours.**

An introduction to French stressing pronunciation, aural comprehension, and basic conversation; instruction in the fundamental principles of grammar; training in reading comprehension. *Not open to students who offer for college entrance more than one year of high school French.*

**FR 201-202. Intermediate French. Credit, 6 semester hours.**

Prerequisite: French 101-102 or equivalent.

Conversation based on the reading of modern prose texts; drill in written and oral self-expression; a review of the principles of grammar.

**GR 101-102. Elementary German. Credit, 6 semester hours.**

An introduction to German stressing pronunciation, aural comprehension, and basic conversation; instruction in the fundamental principles of grammar; training in reading comprehension. *Not open to students who offer for college entrance more than one year of high school German.*

**GR 201-202. Intermediate German. Credit, 6 semester hours.**

Prerequisite: GR 101-102, or equivalent.

A more advanced course for students with two years of high school German or one year of college German. Emphasis is on conversation, with advanced study of grammar and composition.

**RU 101-102. Elementary Russian. Credit, 6 semester hours.**

An introduction to Russian stressing pronunciation, aural comprehension, and conversation; instruction in the fundamental principles of grammar; training in reading comprehension. *Not open to students who offer for college entrance more than one year of high school Russian.*

**SP 101-102. Elementary Spanish. Credit, 6 semester hours.**

An introduction to Spanish stressing pronunciation, aural comprehension, and basic conversation; instruction in the fundamental principles of grammar; training in reading comprehension. *Not open to students who offer for college entrance more than one year of high school Spanish.*

**SP 201-202. Intermediate Spanish. Credit, 6 semester hours.**

Prerequisite: SP 101-102, or equivalent.

A more advanced course for students with two years of high school Spanish or one year of college Spanish. Emphasis is on conversation, with advanced study of grammar and composition. Works of prominent Spanish-American authors will be read.

## Industrial Engineering

**IE 102. Introduction to the Computer. Credit, 2 semester hours.**

Introductory subject to prepare students to make effective use of the computer. Introduction to the basic concepts of machines which process information, stored program concepts, programming language and systems. Laboratory Fee: \$3.00

**IE 114. Management Survey. Credit, 3 semester hours.**

This is an introductory course in management. It introduces the student to all the major functions of industry, their interrelationship, and how they are brought together through organization. Thus the student receives instruction in the preliminaries of methods, cost, production control, product development, finance, physical facilities, quality control, plant engineering, industrial relations, job evaluation, sales, advertising, budgets, and records.

**IE 119. Industrial Safety and Hygiene. Credit, 3 semester hours.**

This is a basic course in industrial accident prevention and industrial hygiene, and covers: managerial accident prevention functions and responsibilities; injury data development, usage, and validity; machine guarding techniques and guard development, including point-of-operation drives; personal protective equipment; fire prevention and control, including flammable solvents, dusts and their characteristics; electrical hazards; hand tools, power and manual; employee training; communications; hazard analysis; accident investigation. Industrial hygiene problems caused by solvents, dusts, noise, radiation are studied as well as regulatory bodies, laws and catastrophe hazards.

**IE 204. Engineering Economics. Credit, 3 semester hours.**

Prerequisite: M 117-118 or BA 118.

A quantitative analysis of applied economics in engineering practice; the economy study for comparing alternatives; interest formulae; quantitative methods of comparing alternatives; intangible considerations; selection and replacement economy for machines and structures; break-even and minimum cost points; depreciation; relationship of accounting to the economy study; review of current industrial practices. Aims to promote logical decisions from the consideration of alternative courses of action.

**IE 214. Management Theory. Credit, 3 semester hours.**

The aim of this course is to provide insight to the elements of the managerial process and to develop a rational synthesis of the mass of detail comprising the subject matter of management. Focusing largely upon the complex problems of top and middle-level management, this course investigates what managers do under given circumstances yet stresses the on-going activities of management as part of an integrated, continuous process.

**IE 221. Data Processing. Credit, 3 semester hours.**

The purpose of this course is to give an overall picture about Data Processing which includes punched cards, paper tape, magnetic tape and its use in Data Processing. The student will be introduced to all characteristics of punched cards, card-layout, and the flow of punched cards through a data processing department, including machines used for card handling, such as key-punch, card-verifier, card sorter, collator, interpreter, accounting machines. Jobs will be analyzed and the student will be introduced to flow-charting.

**IE 223. Personnel Administration. Credit, 3 semester hours.**

The aim of this course is to provide a foundation in fundamental concepts and a general knowledge of techniques in the administration of personnel relations.

The course covers such subjects as the nature of personnel administration, the handling of personnel problems, employee attitudes and morale. Such techniques of personnel administration as recruitment, interviews, placement, training, employee rating as well as wage policies and administration are dealt with. In order to secure breadth and depth in the approach to personnel problems, simple case studies are used at appropriate points throughout the course.

**IE 224. Programming. Credit, 3 semester hours.**

Prerequisites: IE 221, M 117-118 or M 227.

This course will introduce the student to the computer programming starting with the preparation of block diagrams, program coding, program compiling and debugging. At least two different programming languages will be learned and actual jobs programmed. The programs, written by the students, will then be tested and debugged on a computer.

Laboratory Fee: \$8.00

**IE 233. Cost Control. Credit, 3 semester hours.**

Prerequisites: A 112 or A 113, M 115.

The course is a basic analysis of cost control techniques. It is designed to give members of the management team the underlying rudiments of cost control systems they will be using and by which they will be measured and controlled. Theory of standard costs, flexible budgeting, and overhead handling techniques are emphasized by analytical problem solution.

**IE 234. Production Control. Credit, 3 semester hours.**

Prerequisite: IE 114 or IE 214 or M 116.

The instruction stresses the basic principles that govern production control in an industrial plant. These principles are worked out in the problems of procuring and controlling materials, in routing, scheduling, and dispatching. The intent of the course is to familiarize the student with the use of the most up-to-date methods in this field, including visual control systems.

**IE 241. Methods and Motion Study. Credit, 3 semester hours.**

Prerequisite: IE 114 or IE 214 or M 116.

The purpose of this course is to develop an acute awareness of motion economy and an understanding of the principles of methods analysis in industrial operations. Each student is responsible for a project based on a practical shop operation. Through analysis, he will demonstrate the principles of motion economy. Methods analysis techniques include operations analysis, man-machine, gang and operator process charts. Motion study techniques include micromotion filming and analysis of student projects, memomotion filming and synthetic basic motion study analysis. Job analysis and job evaluation techniques are introduced and applied to actual industrial labor problems. Methods Laboratory and Breakage Fee: \$5.00

**IE 342. Work Measurement. Credit, 3 semester hours.**

Prerequisite: IE 241.

A basic course in the measurement of work by the stopwatch and synthetic basic motion systems. Actual shop operations are analyzed in the laboratory for elemental breakdown. Performance rating is practiced from films and from actual shop operations. The various techniques of applying allowances and developing the standard time are practiced. Standard data is developed from laboratory studies and applied to formula construction and application.

Work sampling techniques are demonstrated and applied. Establishing of standards on indirect work, the extensive application of time standards and a survey of significant wage payment plans are also an integral part of the course.

**IE 346. Statistical Analysis. Credit, 3 semester hours.**

Prerequisite: M 203.

This course provides an introduction to the application of statistical techniques to industrial and engineering problems, probability and distribution theory, measures of central tendency and dispersion in relation to population and samples, as well as applications of algebraic methods in industrial practice, including game theory, mathematical programming, and advanced statistical methods.

**IE 351. Synthetic Motion—Time Systems. Credit, 3 semester hours.**

Prerequisite: IE 241.

This is essentially a course in the Methods-Time-Measurement and the Elemental Time Standards systems of work measurement. The theory and technique learned in the classroom are practiced in the laboratory in measuring actual factory operations. These applications are extended to illustrate standard data usage, standard cost methods, and the principles of motion economy.

**IE 436. Quality Control. Credit, 3 semester hours.**

Prerequisite: IE 346.

This course covers economics of quality control; modern methods used by industry to achieve quality of product; preventing defects; organizing for quality; locating chronic sources of trouble; co-ordinating specifications, manufacturing, and inspection; measuring process capability using inspection data to regulate manufacturing processes; control charts; selection of modern sampling plans.

**IE 443. Factory Planning. Credit, 3 semester hours.**

Prerequisite: IE 342.

Factors in plant location, design and layout of equipment. The basic principles of obtaining information essential for carrying out such investigations. This is a survey course which also covers briefly such practices as material handling, storage and storeroom, maintenance, and service departments in modern factories.

Laboratory Fee: \$3.00

**IE 502. Operations Research. Credit, 3 semester hours.**

Prerequisite: BA 216 or IE 346.

The Operations Research area is oriented to various mathematical and near-mathematical methods for getting answers to certain kinds of business problems. The following areas are studied: simulation including Monte Carlo, queuing, the Flood method for assigning jobs, the transportation method, and linear programming including the simplex method with both algebraic solution and tableaux.

**IE 504. Laboratory—Thesis. Credit, 3 semester hours.**

Advanced laboratory testing and special problems. The student works on problems of his own selection which have been outlined by him and have received approval. They may be in the form of a semester thesis or a series of original experiments.

**IE 507. Systems Analysis. Credit, 3 semester hours.**

Prerequisite: IE 114 or IE 214 or M 116.

The Systems Analysis area is concerned with the flow-of-information kind of systems analysis and the complex product-scheduling kinds of systems analysis. The areas covered are computers and integrated systems, procedures, systems analysis and development, program evaluation, review techniques, forms and filing.

**IE 510. Business Games. Credit, 3 semester hours.**

Prerequisite: IE 114 or IE 214.

The Business Games area gives the student the opportunity of correlating his entire course of study in a management simulation framework. These training games make use of simulation models that explore specific management areas in depth. The purposes of these games are as follows: (1) to serve as a framework for training sessions in basic management principles; (2) to serve as an introduction to the problems of manufacturing management; (3) to serve as a focal point for management development discussion of long range planning and decision assisting tools; (4) to show the student the use of modern electronic computer methods.

## Journalism

### J 101. Journalism I. Credit, 3 semester hours.

This course begins with a survey of journalism designed to acquaint students with what the profession offers. The American newspaper as a social institution and a communication medium is studied, together with the reporting of public affairs and elementary editing.

### J 102. Journalism II. Credit, 3 semester hours.

Prerequisite: J 101.

This course carries the student from the basic principles of journalism to the organizational patterns of the mass media. The gathering of journalistic stories, and the writing of general, simple, complex and special type of stories is studied both in theory and in hard core practice.

### J 201. News Writing and Reporting. Credit, 3 semester hours.

Prerequisites: J 101, E 113.

Included in this course are the elements of news, the style and the structure of news stories, news gathering methods, copyreading and editing. The course offers some practical experience in reporting, writing, and editing.

### J 301. Advanced Journalism and Feature Writing. Credit, 3 semester hours.

Prerequisite: J 201.

This course covers the theory of copy reading, editing, feature writing, headline writing, and reporting. Practical problems in feature writing, reporting, and editing are emphasized.

## Mathematics

### M 001. Mathematics Review I. No credit.

Meets 3 hours per week.

Required of both day and evening students who do not show sufficient understanding of mathematics fundamentals as determined by entrance examinations. Topics covered are natural numbers, integers, rationals and irrationals, properties and operations in each, construction and solution of mathematical models using simple equations, and percentages.

### M 002. Mathematics Review II. No credit.

Meets 3 hours per week.

Prerequisite: M 001 or equivalent.

This course is a continuation of M 001 and is offered to both day and evening students who do not show sufficient preparation for the standard course in college mathematics. Topics covered include exponents, polynomials, rational functions, systems of equations, graphs, complex numbers, and quadratic equations.

### M 115. Mathematical Analysis I. Credit, 3 semester hours.

Prerequisite: By entrance examination, or by satisfactory completion of M 002.

*This course cannot be taken for credit by mathematics, physical science, or engineering students.*

This course is designed to offer the foundation needed for the study of calculus. Topics covered are polynomials, algebraic functions, elementary point geometry, plane analytic trigonometry, and properties of exponential functions.

### M 116. Mathematical Analysis II. Credit, 3 semester hours.

Prerequisite: M 115.

*This course cannot be taken for credit by mathematics, physical science, or engineering students.*

An intuitive approach to topics in functions, analytic geometry, differential and integral calculus, and probability. Designed for an insight into, and appreciation of, the methods of analysis.

### M 117. Calculus I. Credit, 3 semester hours.

Prerequisite: M 115, or by entrance examination.

The first-year college course for majors in mathematics, science, and engineering; and the basic requirement for all advanced mathematics. Topics covered introduce differential and integral calculus of functions of one variable, along with plane analytic geometry.

**M 118. Calculus II. Credit, 3 semester hours.**

Prerequisite: M 117.

Continuation of first-year calculus including methods of integration, the fundamental integration theorem, differentiation and integration of transcendental functions, and varied applications.

**M 121-122. Algebraic Structures I and II. Credit, 6 semester hours.**

Prerequisite: By entrance examination.

A first course in abstract algebra: topics covered are sets, mappings, operations, relations, elementary logic, number systems, and abstract systems.

**M 203. Calculus III. Credit, 3 semester hours.**

Prerequisite: M 118.

The calculus of multiple variables, covering third dimensional topics in analytics, linear algebra, and vector analysis; plus partial differentiation, multiple integration, infinite series, and indeterminate forms.

**M 204. Differential Equations. Credit, 3 semester hours.**

Prerequisite: M 203.

The solution of ordinary differential equations, including the use of LaPlace transforms. Included are the topics of existence of solutions, series solutions, matrix methods, non-linear equations, and varied applications.

**M 227-228. Finite Mathematics I and II. Credit, 6 semester hours.**

Prerequisite: M 116 or M 117.

*This course cannot be taken for credit by mathematics, physical science, or engineering students.*

This course introduces the following topics: matrix theory, linear programming, probability, and sets; with applications in the social and management sciences for computers.

**M 231. Linear Algebra. Credit, 3 semester hours.**

Prerequisite: M 122, or M 203.

This course includes the study of matrices, linear systems, determinants, vector spaces, vector geometry, linear transformations, and quadratic forms.

**M 237. Scientific Programming. Credit, 3 semester hours.**

Prerequisite: M 118.

Basic systems are analyzed in terms of discrete data and flow diagrams are constructed using elementary numerical analysis techniques. The program is written, coded, debugged, and analyzed, using a standard program language.

**M 301. Linear Analysis. Credit, 3 semester hours.**

Prerequisites: M 203 and M 231.

Topics covered include vector spaces, infinite series, tensors, eigenvalue theory, transformations, unitary spaces, and an introduction to functional analysis.

**M 303. Advanced Calculus I. Credit, 3 semester hours.**

Prerequisite: M 204.

Topics covered from infinite series include convergence, tests for convergence, integration and differentiation, asymptotic expansions, and an introduction to real analysis concepts. Topics in complex variables include elementary functions, Cauchy-Reimann equations, Cauchy integral theorem, calculus of residues, integration, and conformal mapping.

**M 304. Advanced Calculus II. Credit, 3 semester hours.**

Prerequisite: M 303.

Applied mathematics, including study of the Gamma and Beta functions, LaPlace transforms, Legendre polynomials, Bessel functions, product solutions of partial differential equations, and boundary value problems.

**M 305. Series Solutions. Credit, 3 semester hours.**

Prerequisite: M 204 and permission of the instructor.

This course considers series solutions of ordinary differential equations; including the hypergeometric type, Fourier analysis, introduction to perturbation methods, and successive approximation solutions of nonlinear differential equations.

**M 321-322. Modern Algebra I and II. Credit, 6 semester hours.**

Prerequisites: M 122 and M 203.

Groups, rings, integral domains, fields, reals by Dedekind cuts, complex numbers, polynomials, vector spaces, linear transformations, and matrices are covered in this course.

**M 325. Number Theory. Credit, 3 semester hours.**

Prerequisite: M 122 or M 118, and permission of the instructor.

Topics are selected from the following: mathematical induction, Euclidean algorithm, integers, number theoretic functions, Euler-Fermat theorems, congruence, quadratic residues, and Peano axioms.

**M 338. Numerical Analysis. Credit, 3 semester hours.**

Prerequisite: M 204.

Approximation and error evaluation; finite differences, approximation by polynomial, solution of differential equations and systems of linear equations are covered in this course.

**M 372. Mathematical Statistics. Credit, 3 semester hours.**

Prerequisites: M 204 plus IE 346 and/or one mathematics course beyond M 204.

This course covers fundamental topics in random variables plus discussion of central limit theorem, distribution-free problems, analysis of variance, and an introduction to multivariate distributions.

**M 411-412. Real Analysis I and II. Credit, 6 semester hours.**

Prerequisites: M 303 and M 322.

This course covers topics in the foundations of analysis; included are sets and functions, limits; operations on sequences, continuous functions on metric spaces, differentiation, Riemann-Stieltjes integral, integration theory, and an introduction to measure theory and the Lebesgue integral.

**M 423. Complex Variables. Credit, 3 semester hours.**

*For Mathematics, science, and engineering students.*

Prerequisite: M 303.

This course includes a review of elementary functions and Euler forms; plus holomorphic functions, Laurent series, singularities, Calculus of Residues, contour integration, maximum modulus theorem, bilinear and inverse transformations, conformal mapping, and analytic continuation.

## Mechanical Engineering

**ME 101. Engineering Graphics. Credit, 3 semester hours.**

An introduction to the principles and techniques of graphical communication. Fundamentals of orthographic projections; sections; applied geometry; auxiliary views; analysis of point, line, and plane relationships; detail and assembly drawings of simple machine parts.

**ME 102. Engineering Drawing and Design. Credit, 3 semester hours.**

Prerequisite: ME 101.

This is a drawing and design course specifically designed for technical students and draftsmen, covering layout of assembly drawings, detailing of their parts, properly dimensioned, for interchangeable manufacture, use of A S A tables of metal fits for machine parts, use of threads and fasteners, with the use of tolerances and limits.

**ME 124. Mechanical Processes. Credit, 3 semester hours.**

A survey of mill and manufacturing processes. The casting of metals, pattern making and mold preparation. Fabrication, metal cutting and welding. Demonstrations, laboratory and inspection trips to local manufacturing plants.

**ME 201. Mechanics—Statics. Credit, 3 semester hours.**

Prerequisites: M 118 and PH 108.

The fundamental concepts of force systems in equilibrium are studied. Topics covered include distributed forces, elementary structural analysis, friction and an introduction to virtual work methods.

**ME 202. Mechanics of Materials I. Credit, 3 semester hours.**

Prerequisite: ME 201.

In this course the elastic behavior of structural elements under axial, flexural, and combined loading is studied. Lectures are supplemented with laboratory exercises.

**ME 204. Mechanics—Dynamics. Credit, 3 semester hours.**

Prerequisites: ME 201 and M 203.

In this course the elements of classical dynamics are studied. Topics covered include the kinematics and dynamics of particles, and rigid bodies, inertial references systems, momentum, and energy methods.

**ME 301-302. Thermodynamics. Credit, 6 semester hours.**

Prerequisites: PH 210 and M 204.

The first and second laws of thermodynamics are developed from the fundamental concepts and energy transformations. Processes and cycles using ideal gases lead to the discussion of real gases and the two-phase system. The combustion and mixture of gases is amplified by the study of thermodynamic relations.

**ME 307. Mechanics of Materials II. Credit, 3 semester hours.**

Prerequisite: ME 202.

Some of the topics discussed in this course are the theories of failure, the energy methods, and the non-elastic behavior of structural materials.

**ME 311. Machine Elements. Credit, 3 semester hours.**

Prerequisites: ME 307 and ME 343.

Analysis and design of machine elements to meet specified operating conditions. Stresses, deformations and other factors in design of machine parts.

**ME 312. Mechanical Design. Credit, 3 semester hours.**

Prerequisite: ME 311.

Continuation of Machine Elements. Design projects selected individually and developed by student.

**ME 315-316. Mechanical Engineering Laboratories No. 1 & 2. Credit, 2 semester hours.**

*Open to Juniors in Mechanical Engineering only.*

Basic instrumentation and methods for measurement of static, dynamic and physical phenomena will be demonstrated by selected laboratory experiments. Individual experiments designed by the student will be required in the fields of materials testing, rigid body mechanics, vibrations, etc.

Note: Part time students are charged for a standard 3 semester hour course.

**ME 318. Advanced Materials Processing. Credit, 3 semester hours.**

Prerequisites: ME 124 and ME 202.

Properties of materials. Forming, grinding, and cutting methods. Analysis of modern methods such as electrolytic grinding, high energy forming, and numerical control of machine tools.

**ME 321. Fluid Mechanics. Credit, 3 semester hours.**

Prerequisite: ME 204.

Fluid statics, ideal fluids, potential flow, circulation, dynamic action of fluids, real fluids, laminar and turbulent flow. Flow in pipes, open drain flow. Orifices, nozzles and weirs. Boundary layer concepts. Dimensional analysis.

**ME 322. Gas Dynamics. Credit, 3 semester hours.**

Prerequisite: ME 321.

Compressible fluids, subsonic and supersonic flow. Air foils, vanes and blades. Lift and drag. Boundary layer in compressible flow. Shock waves.

**ME 335. Tool Design. Credit, 3 semester hours.**

Prerequisites: ME 124 and ME 201.

Basic techniques of tool design, methods analysis, drill jig design, tolerances and allowances, cutting tools, die design, gages and fixtures

**ME 336. Tool Engineering. Credit, 3 semester hours.**

Prerequisite: ME 335.

A continuation of course ME 335 with emphasis on economics, estimating and process planning. Group project entailing the complete planning and designing necessary to manufacture machine parts.

**ME 337. Heat Power. Credit, 3 semester hours.**

Prerequisites: PH 210 and M 118.

Elementary thermodynamics for those students not studying mechanical engineering. The basic laws of thermodynamics are discussed with respect to the mass and energy transfers and transformations. Processes and cycles of fluids in closed and open systems provide insight into the study of power systems in general.

**ME 343. Mechanisms. Credit, 3 semester hours.**

Prerequisites: ME 204 and M 204.

Graphical and analytical methods for determining displacements, velocities and accelerations of machine components such as linkage and cams. Application to simple mechanisms.

**ME 344. Mechanics of Vibration. Credit, 3 semester hours.**

Prerequisites: ME 202, ME 204 and M 204.

The objective of this course is to present and develop the mathematical relationships necessary for the solution of problems involving the vibration of lumped and continuous systems; damping; free and forced motion; resonance; isolation; energy methods; balancing; single, two and multiple degrees of freedom; vibration measurement.

**ME 401. Systems Analysis. Credit, 3 semester hours.**

Prerequisites: EE 224 and ME 344.

The reduction of real systems to electrical and mechanical system circuit models; the analogous behavior of the mechanical and electrical components which make up these models, the response to impulse, exponential and harmonic excitations, transfer functions, stability and resonance, analog simulation and analog computer programming.

**ME 403. Propulsion Systems. Credit, 3 semester hours.**

Prerequisite: ME 302.

Power sources for use in propulsion are analyzed. From steam through the internal combustion engine and the gas turbine, the study reaches the advanced systems, the rockets, jets and exotic engines. Emphasis is placed upon the theoretical analysis of performance.

**ME 404. Heat Transfer. Credit, 3 semester hours.**

Prerequisite: ME 302.

The primary types of heat transfer are conduction, convection, and radiation. The study of the types of heat transfer in transient and steady-state problems leads to solution of problems by analytical, graphical, and numerical methods. The effects can then be combined to analyze actual heat transfer problems encountered in practice.

**ME 405. Advanced Mechanical Design. Credit, 3 semester hours.**

Prerequisites: ME 312 and ME 321.

Selected and advanced topics related to design in Mechanical Engineering. Individual design projects developed by student.

**ME 408. Advanced Dynamics. Credit, 3 semester hours.**

Prerequisites: ME 204 and M 301 or M 304.

Kinematics and dynamics of particles and systems of particles, Lagrange's equations. Central force motion. Hamilton's principle. The inertia tensor and rigid body motions.

**ME 415-416. Mechanical Engineering Laboratories No. 3 & 4. Credit, 2 semester hours.**

*Open to Seniors in Mechanical Engineering only.*

Various experiments are provided to study problems in heat transfer, fluid flow, and energy conversion. Stress is placed upon analysis of the problem and use of library sources to answer the statement of the problem. Where possible, an economic analysis should accompany the engineering solution.

Note: Part time students are charged for a standard 3 semester hour course.

**ME 512. Senior Seminar. Credit, 3 semester hours.**

*Open to Seniors in Mechanical Engineering only.*

An independent design, theoretical analysis or laboratory investigation in the field of the student's major interest. Subject to be approved by the Chairman of the department, with the work accomplished under the guidance of a staff member.

## **Metallurgy and Materials**

**MT 123. Engineering Materials. Credit, 3 semester hours.**

A survey course of the principal engineering materials of modern technology. Physical testing and the evaluation of tests, steel and non-ferrous alloys and their heat treatments, cement, concrete, wood, ceramics and plastics are studied. The course is designed to give engineers sufficient background in these materials to aid them in selecting and setting specifications. Laboratory sessions enable students to witness and perform mechanical tests, heat treatments, hardenability tests, and cold rolling and annealing operations.

**MT 219. Physical Metallurgy. Credit, 3 semester hours.**

Prerequisites: PH 209 and CH 101-102. (CH 101-102 may be taken concurrently.)

The course aim is towards a basic understanding of the structure and properties of metals and chemical or physical processes by means of which such characteristics are modified. Discussions will be directed in specific areas: for example, metallurgical tests, equilibrium phase diagrams, heat treatment of ferrous and non-ferrous alloys, steel production and hot and cold working of metals. Appropriate laboratory experiments are included in addition to lectures. This approach is designed to give the prospective engineer an acquaintance with metals fabrication and heat treatment.

**MT 220. Metallography. Credit, 3 semester hours.**

Prerequisite: MT 219.

Further understanding of physical metallurgy with emphasis on diffusion, precipitation hardening, solidification, heat treatment and crystallography. Several lectures will be devoted to the preparation of metallurgical specimens for microscopic examination, the resulting microstructural appearance and its relation to properties. Lectures will be supplemented by laboratory work such that practical experience may be gained by the student.

**MT 301. Welding Metallurgy. Credit, 3 semester hours.**

Prerequisite: MT 220.

The subject matter will cover welding and brazing procedures for ferrous and non-ferrous alloys. Demonstrations and examinations of macro and microstructures of welded members. The following processes will be studied in detail: brazing, metal arc, inert atmosphere, atomic hydrogen, electron beam, laser, and resistance welding.

**MT 302. Rubber and Plastics Technology. Credit, 3 semester hours.**

Natural and synthetic rubbers, their production and fabrication are studied with attention to vulcanizing, additives, and fillers. Tire manufacture is discussed in detail. Thermoplastic and thermo-setting plastics are reviewed in terms of chemistry, properties and molding methods.

**MT 304. High Temperature Alloys. Credit, 3 semester hours.**

Elevated temperature behavior of alloys is discussed as well as associated tensile, creep, rupture, and fatigue testing. Ferritic and austenitic steels, nickel and cobalt base superalloys are discussed in terms of composition, structure, and strengthening mechanisms. Other alloy systems are reviewed such as titanium, columbium, tantalum, chromium, molybdenum and tungsten.

**MT 324. Nuclear Metallurgy. Credit, 3 semester hours.**

Prerequisites: MT 219 and PH 315.

The content of this course will include a general discussion of nuclear reactors, production and fabrication of uranium metal and alloys, metallurgy of zirconium, thorium, plutonium, beryllium, liquid metals used in nuclear reactors, fabrication of reactor components, non-destructive materials testing and the radiation damage of materials.

**MT 331. Non-ferrous Metallurgy. Credit, 3 semester hours.**

Prerequisite: MT 220.

The physical metallurgy of aluminum, magnesium, copper, nickel, zinc, lead, tin and their alloys is covered by lecture, discussion and laboratory work. Melting, alloying, casting, ex-

truding, rolling, drawing, and heat treatment of the metals are studied with emphasis on the efforts of variables and reasons therefor. Typical mill and service difficulties are analyzed in the light of the specific fundamental principles involved.

**MT 342. Steels and Their Heat Treatment. Credit, 3 semester hours.**

Prerequisite: MT 220.

This course covers in detail fundamentals of ferrous physical metallurgy such as the iron-carbon phase diagram, time-temperature-transformation diagrams, hardenability, and the effects of alloying elements. Heat treating is discussed in terms of resulting microstructures and physical properties. Practical applications include engineering steels, tool steels, and stainless steels, as well as the requirements of deep drawing, low carbon steel.

## Music

**MU 102. Music Analysis and History. Credit, 3 semester hours.**

Development of music from its early stages to its present form, including the contributions of the great masters to musical evolution; appreciation of music.

**MU 103. Contemporary Music. Credit, 3 semester hours.**

This course provides a survey of the main currents in contemporary music with emphasis on the leading composers of this century.

**MU 105-106. Chorus. Credit, 2 semester hours.**

Open to all students interested in group singing. Students with adequate scholastic standing may carry this course for credit in addition to a normal program. Two hours a week.

## Orientation

**O 101. Introduction to Engineering. One semester. No credit.**

A survey to introduce the student to specific obligations of engineering students and to the broad concepts of engineering in several areas, and to appraise both the human and technical aspects. Slide-rule instruction included. Required of all first year engineering students. Satisfactory completion is required for graduation.

**O 111. Orientation and Counseling. One semester. No credit.**

This is essentially a guidance activity through which students are assisted in 1) making the most satisfactory adjustment to college life and study, 2) establishing intelligent long-range vocational goals for themselves, and 3) conferring with their faculty advisors on matters of curriculum and scheduling. This course is required for graduation.

## Philosophy

**PHL 111. Introduction to Problems of Philosophy. Credit, 3 semester hours.**

An introduction to reflective thinking on such central issues of human life as man's place in the universe, how we discover truth, the nature of beauty and the good, and the basis of moral choices. Ideas of a few major philosophers from Plato to Dewey will be presented. Stimulation of individual clear thinking upon life's most vital problems will be emphasized in discussion.

**PHL 113. Introduction to the History of Philosophy. Credit, 3 semester hours.**

The purpose of this course is to instruct the student in the traditions of philosophic thought in the Western cultural heritage.

A chronological development beginning with Pre-Socratic thinkers and coming down to the twentieth century is considered. The thoughts of individual men such as Aristotle, St. Thomas, Spinoza, Kant, and others are studied in their important aspects and related to surrounding circumstances. By this means, major philosophic attitudes are outlined.

**PHL 124. Logic and Scientific Method. Credit, 3 semester hours.**

The purpose of this course is to introduce the student to the formal rigors of deduction, warranted induction, and scientific description, so far as they bear on the theory, application and limits of scientific method.

Class procedure consists of developing the main problems in the logic science, presenting main points via examples, and discussion of application.

**PHL 222. Ethics in a Changing Society. Credit, 3 semester hours.**

Prerequisite: PHL 111 or 113.

A constructive appraisal of the major ethical systems in the framework of the problems of contemporary society. Ethical norms which point to the goals and ends of life and their relation to the issues of science, business, the professions and other human activities are examined in problem studies.

## Physical Education

**PE 111-112. Physical Education. No credit.**

Includes units in sports, rhythms, physical fitness tests, and exercises. The objective of the work is acquaintance with a wide variety of activities. Basic course required of all day freshmen.

## Physics

**PH 108. Physics I w/Lab. Credit, 3 semester hours.**

Prerequisite: M 117 or instructor's approval.

Fundamental concepts and mathematical exposition, including calculus, of mechanics, statics, kinematics, Newton's Laws, work, energy, power, conservation of energy and momentum, rotational concepts, simple harmonic motion.

Laboratory and Breakage Fee: \$15.00 per semester.

**PH 201-202. General Physics w/Lab. Credit, 6 semester hours.**

Prerequisite: M 115 or equivalent.

This is a basic general physics course for students not majoring in science or engineering. The basic principles of mechanics, heat, energy, electricity, sound and light are developed without calculus. Students are encouraged to examine the philosophy of physical science by outside reading and simple laboratory work.

Laboratory and Breakage Fee: \$15.00 per semester.

**PH 209. Physics II w/Lab. Credit, 3 semester hours.**

Prerequisites: PH 108 or PH 201-202, M118.

Fundamental concepts and mathematical exposition, including calculus, of electricity and magnetism, electrostatics, direct currents, magnetic effects of a current, electrical instruments, ballistic galvanometer, induced E.M.F., inductance and capacitance, simple harmonic motion, physical basis for A.C. Circuits, bridge measurements, potentiometer measurements.

Laboratory and Breakage Fee: \$15.00 per semester.

**PH 210. Physics III w/Lab. Credit, 3 semester hours.**

Prerequisite: PH 209.

Fundamental radiation topics include heat, sound, light; simple harmonic motion, generation of mathematical wave forms, wave propagation, Laser demonstration of optical principles, lens systems, theory of color, wave interference, gratings, prisms, filters, spectroscopy.

Laboratory and Breakage Fee: \$15.00 per semester.

**PH 315. Nuclear Physics. Credit, 3 semester hours.**

Prerequisite: PH 323 or approval of instructor.

This course is a survey of elementary nuclear physics. Topics include: nuclear structure, natural radioactivity, induced radioactivity, nuclear forces, and reactions, fission and fusion, reactors and topics of special interest.

**PH 323. Physics IV. Credit, 3 semester hours.**

Prerequisite: PH 210.

Modern physics fundamentals. A survey of 20th century developments in physics. Topics included are: Special relativity, quantum theory of radiation, De Broglie waves, the Bohr atom, elementary wave mechanics, the solid state, crystal structure, semiconductors and Lasers.

**PH 406. Solid State Physics. Credit, 3 semester hours.**

Prerequisite: PH 210 or PH 323.

A study of the elementary principles of the electrical behavior of solids as applied to semiconductors, metallurgy, and magnetically activated solid state devices.

## Psychology

**P 111. Psychology. Credit, 3 semester hours.**

This course is designed to give the student a general knowledge of the important principles of human behavior. Topics included are motivation, emotion, learning, personality, intelligence, etc. The utilization of psychological knowledge in relation to everyday human activities is emphasized.

**P 211. Social Psychology. Credit, 3 semester hours.**

Prerequisite: P 111.

The behavior of man in his social relations. Problems of crowd behavior, social control, propaganda, suggestion, imitation, competition, cooperation, and leadership.

**P 212. Business and Industrial Psychology. Credit, 3 semester hours.**

Prerequisite: P 111.

The study of psychological principles and research findings pertinent to administration in business and industry. Stress is placed on contemporary research of behavior factors in managerial contexts.

## Science

**SC 111-112. Modern Science. Credit, 6 semester hours.**

A survey of the methods of science and the place of physical science in our modern world. The material covered is taken from astronomy, physics, chemistry and geology, with the emphasis on the unity of physical science as a field of knowledge. The aim of the course is to develop a scientific attitude of mind and to provide for the student a summary of man's knowledge about the world in which he lives.

**SC 121-122. Biology. Credit, 6 semester hours.**

The object of this course is to acquaint the student with the basic principles of life's processes. The major concepts of biology, including the metabolic functions of the cell and cellular morphology, are surveyed. Taking the human organism as a representative example of the animal kingdom, anatomy, disease, ecology, embryology, evolution, genetics, nutrition, physiology, and taxonomy are studied.

**SC 131-132. Biology Laboratory. Credit, 2 semester hours.**

To be taken concurrently with SC 121-122.

The dissection and drawing of various systems in animals such as frogs, fish and fetal pigs and microscopic examination of cells and tissues will be included in this course.

Laboratory and Breakage Fee: \$15.00 per semester.

**SC 151. Zoology w/Lab. Credit, 4 semester hours.**

Both invertebrate and vertebrate animals are studied in the laboratory as well as the classroom. A comparative study is made of the general morphology and physiology of the more important structures and organ structures of the animals from phylum to phylum. Life processes, inheritance, ecology, and evolution are discussed. The laboratory consists of dissecting representative animals from the major phyla, with special emphasis on the Phylum Chordata.

Laboratory and Breakage Fee: \$15.00 per semester.

## Social Administration

**SA 211. Principles of Public Administration. Credit, 3 semester hours.**

Prerequisites: SS 121 and SS 122 or SS 215.

The development, organization, functions, and problems of national, state, and local administration.

**SA 301-302. Social Administration I and II. Credit, 6 semester hours.**

Prerequisites: SA 211 and SS 113.

This course involves an intensive study of the following: welfare legislation, counseling in social administration, criminology, fields of social work, introduction to public welfare, introduction to case work, sociology of minority relations, child welfare problems, juvenile delinquency, group dynamics, methods of social research, introductory social statistics, sociology of the family, sociology of industry, population problems, problems of an aging population, problems of redevelopment and urban renewal.

## Social Studies

**SS 113. Sociology. Credit, 3 semester hours.**

This course is a study of the role of culture in society; the person and personality; groups and group behavior; institutions; social interaction and social change.

**SS 114. Problems in Sociology. Credit, 3 semester hours.**

Prerequisite: SS 113.

From the principles covered in Sociology 113, the student studies the major problems which confront the present social order and the methods in practice and being considered for dealing with these problems.

**SS 121. Political Science. Credit, 3 semester hours.**

This course deals with the structure and functions of the national government, party organization, national and state relations, and American politics as compared to those of other countries and the trends in modern politics.

**SS 122. Political Science. Credit, 3 semester hours.**

This course deals with the structure and functions of the state and local governments in the United States.

**SS 131. History of Western Civilization to the Renaissance. Credit, 3 semester hours.**

This course is a general survey of western history from the ancient beginnings to the Renaissance, designed to give the student an appreciation of historical processes that have shaped our civilization.

**SS 132. History of Western Civilization from the Renaissance. Credit, 3 semester hours.**

Beginning with the Renaissance, this course gives a general survey of history down to our own time. An emphasis is placed on those historical processes that have shaped our modern institutions and culture.

**SS 201. History of the United States to 1865. Credit, 3 semester hours.**

Prerequisites: SS 131-132 or SS 121-122 or SS 215 for SS 122.

This course provides a political, economic and social survey of the history of the United States through the Civil War.

**SS 202. History of the United States from 1865. Credit, 3 semester hours.**

Prerequisite: SS 201.

This course continues the political, economic and social survey of the history of the United States from the end of the Civil War to our own time.

**SS 215. Comparative Government.**

Prerequisite: SS 121.

An historical comparative approach to the political institutions of the United Kingdom, U.S.S.R., Federal Republic of Germany and France with special emphasis on the relationship between Western and Eastern political systems.

**SS 216. Municipal Government. Credit, 3 semester hours.**

Prerequisites: SS 121 and SS 122 or SS 215.

Intensive study of selected problems of structure, organization and powers of local government; intergovernmental relationships; administrative and personnel management; special application to Connecticut.

**SS 302. The U. S. Constitution. Credit, 3 semester hours.**

Prerequisites: SS 121 and SS 122 or SS 215.

A study of principles and concepts of the Constitution as revealed in leading decisions of the courts. Concepts and principles of judicial review, federalism, separation of powers, implied powers, due process of law, equal protection, the contract clause, etc.

# New Haven College Faculty

## Credit Programs

1965-1966

|                                                                                                                                      |                                                |
|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| RONALD T. ALEXANDER, B.A., M.A.                                                                                                      | <i>Industrial Engineering<br/>Psychology</i>   |
| ROGER D. ALLING, B.S.<br>C. P. A., Connecticut                                                                                       | <i>Accounting</i>                              |
| LORRAINE ANDERSEN, B.S., M.A.                                                                                                        | <i>Reading Laboratory</i>                      |
| JOSEPH J. ARNOLD, JR., B.S., M.S.<br>Associate Professor of Industrial Engineering                                                   | <i>Industrial Engineering</i>                  |
| EDWARD R. ASTARITA, A.S., B.S., M.S.<br>Assistant Professor, University of Bridgeport                                                | <i>Accounting</i>                              |
| FRANCIS S. BALDYGA, B.S.<br>Accounting Supervisor, Technical Measurement Corporation                                                 | <i>Business Finance</i>                        |
| JAMES BARR, B.S.<br>Manager, New Haven Credit Bureau                                                                                 | <i>Business Administration<br/>Mathematics</i> |
| PETER B. BARTON, A.B.                                                                                                                | <i>English</i>                                 |
| TOM BEAUCHAMP, B.A., M.A.                                                                                                            | <i>Philosophy</i>                              |
| RAMONA BEEKEN, B.S., M.A.                                                                                                            | <i>English and Humanities</i>                  |
| STEPHEN J. BENNETT, B.S., A.M.<br>Associate Professor of Philosophy                                                                  | <i>Philosophy</i>                              |
| BARRY BERG, B.A.                                                                                                                     | <i>English</i>                                 |
| ROBERT L. BERGEN, B.S., B.A., M.S., Ph.D.<br>Senior Research Specialist, United States Rubber Company                                | <i>Chemistry</i>                               |
| ROBERT G. BERNER, B.Ch.E., M.Ch.E.<br>Head, Analog Computer Laboratory, Naugatuck Chemical Division,<br>United States Rubber Company | <i>Electrical Engineering</i>                  |
| ELLIOTT H. BIRD, B.S., M.A.<br>Instructor of Mathematics                                                                             | <i>Mathematics</i>                             |
| WILLIAM C. BIXBY, B.S.                                                                                                               | <i>Physics</i>                                 |
| IRWIN S. BOAK, B.S., M.A.<br>Associate Professor of Physics                                                                          | <i>Physics</i>                                 |
| CARLETON L. BOWDEN, B.E.<br>Process Engineer, Pratt & Whitney Aircraft                                                               | <i>Mechanical Engineering</i>                  |
| ROGER W. BOYD, B.S.<br>Area Development Consultant, The United Illuminating Company                                                  | <i>Engineering Drawing</i>                     |
| MAURICE A. BRESLOW, B.A., M.A.                                                                                                       | <i>English</i>                                 |
| NANCY BREWER, B.A., M.M.<br>Instructor of English and Humanities                                                                     | <i>English and Humanities</i>                  |
| DAVID BROWN, B.S., M.A.<br>Certified Psychologist, Connecticut<br>Associate Professor of Psychology                                  | <i>Psychology</i>                              |
| RUSSELL BUDROW, B.E.E.<br>Division Distribution Engineer, The United Illuminating Company                                            | <i>Physics</i>                                 |

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|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| MIGUEL BUISAN, B.A.                                                                                                    | <i>Spanish</i>                                    |
| GEORGE CALLAHAN, A.B., L.L.B.<br>Protection Manager, N.Y., N.H. & H. R.R.                                              | <i>Police Organization and<br/>Administration</i> |
| ALPHONSE CANNAVACIOLO, B.S., M.A.<br>Instructor, North Haven High School                                               | <i>Mathematics</i>                                |
| ROLF CARRIUOLO, B.A.<br>Instructor, University of Hartford                                                             | <i>Music</i>                                      |
| JOHN E. CARTER, B.S.<br>Casework Supervisor, Juvenile Court for the State of Connecticut                               | <i>Juvenile Delinquency</i>                       |
| EVELYN CASEY, B.A., M.A.<br>Assistant Professor of English and Humanities                                              | <i>English and Humanities</i>                     |
| GERALD O. CAVALLO, B.B.A., M.B.A.<br>Instructor of Business Administration                                             | <i>Business Administration</i>                    |
| KEE W. CHUN, A.B., A.M., Ph.D.<br>Associate Professor of Physics                                                       | <i>Physics</i>                                    |
| DAVID S. CLARKE, JR., B.A., Ph.D.<br>Instructor of Philosophy                                                          | <i>Philosophy</i>                                 |
| CARROLL P. COLE, B.A., M.A.                                                                                            | <i>Speech</i>                                     |
| JOHN CORCORAN, B.S., M.A.<br>Speech Therapist                                                                          | <i>English</i>                                    |
| EDWARD H. COWERN, B.S. in E.E.<br>Power Sales Department, The United Illuminating Company                              | <i>Electrical Engineering</i>                     |
| HEINZ DIETRICH, B.S., M.S., Ph.D.<br>Senior Research Associate, Olin Mathieson Chemical Corporation                    | <i>Chemistry</i>                                  |
| LARRY DIXON, B.A.<br>Sales Representative, I.B.M. Corporation                                                          | <i>Data Processing</i>                            |
| CHARLES DUTTON, A.B., M.A.<br>Instructor of Business Administration                                                    | <i>Business Administration</i>                    |
| EARL JEROME ELLISON, A.B., M.S.<br>Special Lecturer, English and Humanities                                            | <i>English and Humanities</i>                     |
| LEROY F. EMERY, B.A., (Th), M.A. (Th), B.D.<br>Pastor, Yalesville Baptist Church                                       | <i>English</i>                                    |
| RICHARD FALVEY, B.A.<br>Assistant Vice President, Second National Bank of New Haven                                    | <i>Personnel Administration</i>                   |
| JAMES J. FANNING, B.S., M.A.                                                                                           | <i>Orientation</i>                                |
| JAMES R. FANTARELLA, B.S.<br>Electric Boat Division, General Dynamics Corporation                                      | <i>Mathematics</i>                                |
| RUDY FAZIO, B.S.E.E.<br>Electrical Engineer, MB Electronics, Division of Textron<br>Electronics, Inc.                  | <i>Electrical Engineering</i>                     |
| WILLIAM R. FERNER, M.E.<br>Licensed Professional Engineer (Conn.)<br>Engineer, The United Illuminating Company         | <i>Electrical Engineering</i>                     |
| ROBERT FEINSCHREIBER, B.A., M.B.A.<br>Instructor, Yale University                                                      | <i>Business Administration</i>                    |
| HARRY W. FILLMAN, B.S., M.S.<br>Licensed Professional Engineer (Ohio)<br>Assistant Professor of Industrial Engineering | <i>Industrial Engineering</i>                     |

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| FREDERICK F. FISCHER, B.S.<br>C. P. A., Connecticut                                                                              | <i>Accounting and Taxation</i>  |
| CHARLES FLYNN, Ph.B., LL.B.<br>Law partner, Kopkind & Flynn                                                                      | <i>Business Law</i>             |
| W. PAUL FLYNN, B.A., LL.B.<br>Law partner, Kopkind & Flynn                                                                       | <i>Business Law</i>             |
| EVELYN FRACASSO, B.A.                                                                                                            | <i>Reading Laboratory</i>       |
| STEPHEN FRIEDLER, B.S., LL.B.<br>Law partner, Friedler & Kaplan                                                                  | <i>Business Law</i>             |
| ALLEN A. FURBUSH, B.S.<br>Athletic Director, YMCA                                                                                | <i>Physical Education</i>       |
| EDWARD T. GEORGE, B.S., M.S., Ph.D.<br>President, Connecticut Scientific Center, Inc.                                            | <i>Scientific Programming</i>   |
| ALICE GERTZOG, B.A., M.S. in L.S.<br>Instructor                                                                                  | <i>Library</i>                  |
| JOHN W. GHOREYEB, B.A., M.A.                                                                                                     | <i>Personnel Administration</i> |
| ANTHONY GIORDANO, B.C.E., M.S.E.<br>Consulting Engineer                                                                          | <i>Mechanical Engineering</i>   |
| VIRGINIA GLANN, B.S.                                                                                                             | <i>Chemistry</i>                |
| SYDNEY J. GOLUBOFF, A.B.                                                                                                         | <i>Speech and Journalism</i>    |
| ISRAEL GOPSTEIN, B.E.E., M.S.E.E.<br>Assistant Professor of Electrical Engineering                                               | <i>Electrical Engineering</i>   |
| HENRY J. GRAVER, JR., B.S., M.S.<br>Counselor, West Haven High School                                                            | <i>Psychology</i>               |
| MAXWELL L. GRIFFITH, Ph.B.                                                                                                       | <i>Industrial Engineering</i>   |
| OSCAR L. GROSS, M.S.E.E.<br>Associate Professor of Electrical Engineering                                                        | <i>Electrical Engineering</i>   |
| CHARLES GUNN, B.S. in E.E., M.E.E.<br>Licensed Professional Engineer, (Conn.)<br>Power Engineer, The United Illuminating Company | <i>Electrical Engineering</i>   |
| WYHIBE HADDAD, B.S., M.A.                                                                                                        | <i>Reading Laboratory</i>       |
| EARL O. HAMEL, JR., A.B.<br>Instructor of Mathematics                                                                            | <i>Mathematics</i>              |
| WILLIAM N. HAMILTON, B.S., LL.B.<br>Attorney-at-Law                                                                              | <i>Business Administration</i>  |
| HENRY O. HAUGHTON, Ph.B.<br>Licensed Professional Engineer, (Conn.)                                                              | <i>Mechanical Engineering</i>   |
| OLIVER HEADLEY, B.S., M.A.<br>Assistant Professor, University of Bridgeport                                                      | <i>Economics</i>                |
| JOHN M. HEATH, B.A., M.A.<br>Chairman, Mathematics Department, Hopkins Grammar School                                            | <i>Mathematics</i>              |
| ROGER J. HEBERT, B.A., M.Ed. in P.E.<br>Instructor of Physical Education                                                         | <i>Physical Education</i>       |
| HENRY H. HOFFMAN, B.S., M.S.<br>Nuclear Fuels Research Laboratory of Olin Mathieson<br>Chemical Corporation                      | <i>Nuclear Metallurgy</i>       |

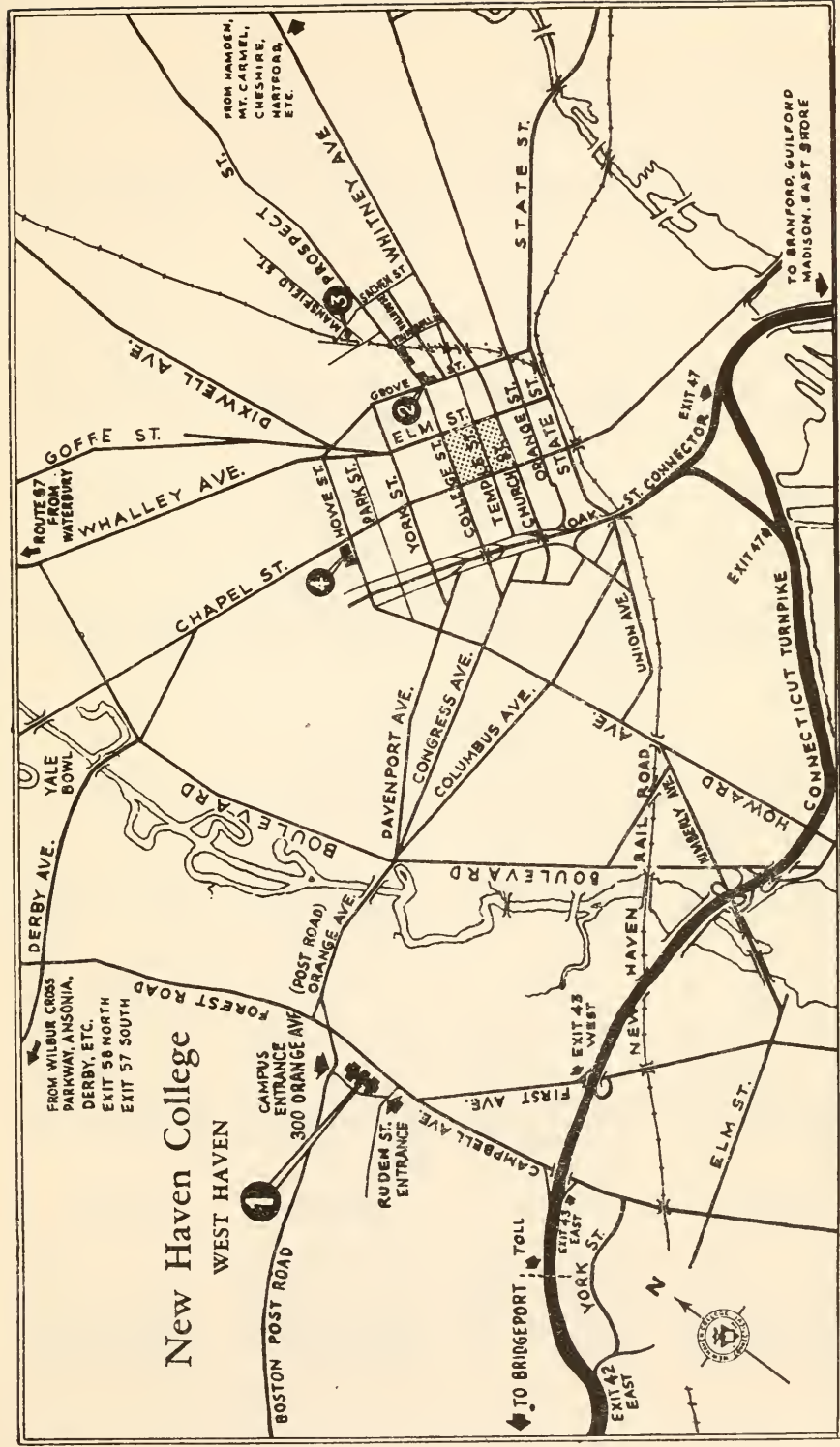
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|---------------------------------------------------------------------------------------------------------------------|---------------------------------|
| WILLIAM G. HOLMAN, A.B., M.A.<br>C. P. A., New York<br>Associate Professor of Business Administration               | <i>Business Administration</i>  |
| ROBERT T. HOWLING, B.A., M.A., Ph.D.<br>Professor of English and Humanities                                         | <i>English and Humanities</i>   |
| LEIGH W. HUNT<br>Former Assistant Chief Draftsman, Safety Electrical<br>Equipment Corporation                       | <i>Engineering Drawing</i>      |
| SYED I. HUSAIN, B.S., M.S., M.S.E.E.<br>Associate Professor of Electrical Engineering                               | <i>Electrical Engineering</i>   |
| ALLEN C. HUTCHINSON, B.A., M.A., Ph.D.<br>Professor of Economics                                                    | <i>Economics</i>                |
| CARL J. IACCARINO, A.S.<br>Chief Engineer, J-B-T Instruments, Inc.                                                  | <i>Mathematics</i>              |
| ALBERT KACILLAS, B.S.<br>Instructor, Mechanical Arts, Dag Hammarskjold Jr. High School                              | <i>Graphics</i>                 |
| MORTON D. KAPLAN, B.S., M.A., LL.B.<br>Attorney-at-Law, Friedler & Kaplan                                           | <i>Economics</i>                |
| NATHANIEL KAPLAN, B.A., M.A.<br>Assistant Professor of English and Humanities                                       | <i>English and Humanities</i>   |
| PHILLIP S. KAPLAN, B.A., M.A., Ph.D.<br>Associate Professor of Social Studies                                       | <i>Economics and History</i>    |
| THOMAS KATSAROS, B.A., M.A., M.B.A., Ph.D.<br>Assistant Professor of History                                        | <i>History</i>                  |
| RICHARD B. KELLER, B.S.<br>C. P. A., Connecticut                                                                    | <i>Accounting</i>               |
| LOIS KELLY, B.A.                                                                                                    | <i>Physical Education</i>       |
| JOHN J. KEOGH, B.S.<br>President, John J. Keogh Associates, Inc.                                                    | <i>Personnel Administration</i> |
| WILLIAM F. KIRK, B.M., M.E.<br>Technician Specialist, Olin Mathieson Chemical Corporation                           | <i>Metallurgy</i>               |
| DAVID KRANES, B.A., M.A.                                                                                            | <i>English</i>                  |
| CONSTANTINE LAMBRAKIS, B.S.E.E., M.S.M.E.<br>Instructor of Mechanical Engineering                                   | <i>Mechanical Engineering</i>   |
| RONALD A. LAMORTE, B.S.<br>C. P. A., Connecticut<br>Ernst & Ernst                                                   | <i>Accounting</i>               |
| PAUL I. LANGEWISCH, B.S.E.E.<br>Superintendent of Distribution, Center Division,<br>The United Illuminating Company | <i>Physics</i>                  |
| ROBERT N. LARSON, A.B., A.M., Ph.D.<br>Associate Professor of Political Science                                     | <i>Political Science</i>        |
| THOMAS J. LEHMAN, B.B.A., M.B.A.<br>Senior Accountant, Armstrong Rubber Company                                     | <i>Business Administration</i>  |
| ALAN LEMKIN, B.S.<br>C. P. A., Connecticut                                                                          | <i>Accounting</i>               |
| SHEILA A. LEVITSKY, B.S., A.M.                                                                                      | <i>Speech</i>                   |

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|---------------------------------------------------------------------------------------------------------------------|--------------------------------|
| IVAN LOBAY, M.E.<br>Licensed Professional Engineer, (Conn.)<br>Associate Professor of Mechanical Engineering        | <i>Mechanical Engineering</i>  |
| DOROTHY LOCKROW, B.S. in L.S., M.A.<br>Instructor                                                                   | <i>Library</i>                 |
| ANTE LUJIC, M.E.E.<br>Group Leader, Research and Development, The Cramer Division,<br>Giannini Controls Corporation | <i>Electrical Engineering</i>  |
| WILLIAM C. LYNCH, LL.B.<br>Senior partner, Lynch & Traub                                                            | <i>American Legal System</i>   |
| PETER A. MACARY, A.S., B.A.<br>Instructor of Data Processing                                                        | <i>Data Processing</i>         |
| EDWARD J. MAFFEO, B.F.A., M.A.<br>Instructor of Art and English                                                     | <i>Art and English</i>         |
| PAUL MAGISTRETTI, A.B., M.A.                                                                                        | <i>Speech</i>                  |
| RALPH E. MARCARELLI, A.B., M.A.<br>Instructor of English and Humanities                                             | <i>English and Humanities</i>  |
| JOHN C. MARTIN, B.E., M.E.<br>Licensed Professional Engineer, (Conn.)<br>Instructor of Mechanical Engineering       | <i>Mechanical Engineering</i>  |
| GERALD A. MASON, B.S.E.E., M.S.E.E.<br>Electrical Engineering Laboratory Assistant, Yale University                 | <i>Electrical Engineering</i>  |
| BERTRAND MATHIEU, B.A., M.A.<br>Instructor of English and Humanities                                                | <i>English and Humanities</i>  |
| MALCOLM D. MCBAIN, B.S.<br>Instructor, Milford Academy                                                              | <i>Mathematics</i>             |
| GEORGE MCCABE, B.A., Ph.D.<br>Associate Professor of Business Administration                                        | <i>Business Administration</i> |
| VICTOR MCCREA, B.S.<br>Special Lecturer, Police Science                                                             | <i>Police Science</i>          |
| STUART J. MCENERNEY, B.S., M.A.<br>Instructor, Shelton High School                                                  | <i>Mathematics</i>             |
| LETICIA MOBLEY, B.A., M.A.                                                                                          | <i>Economics</i>               |
| ELIZABETH J. MOFFITT, B.F.A.                                                                                        | <i>Art</i>                     |
| RICHARD C. MORRISON, A.B., M.S., Ph.D.<br>Assistant Professor of Physics                                            | <i>Physics</i>                 |
| ALFRED MUELLER, B.A.<br>Instructor                                                                                  | <i>Library</i>                 |
| JOHN P. MULVEY, B.S.E.E.<br>Engineer, The Southern New England Telephone Company                                    | <i>Electrical Engineering</i>  |
| HAROLD NATHAN, B.A.                                                                                                 | <i>Public Finance</i>          |
| JAMES NATION, B.S.E.E.<br>Underground Supervisor, The United Illuminating Company                                   | <i>Mathematics</i>             |
| JOHN E. NEWELL, B.A.<br>Analytical Research Department, United States Rubber Company                                | <i>Chemistry</i>               |
| PHYLLIS R. NOVICK, A.B.                                                                                             | <i>Mathematics</i>             |

|                                                                                                                                           |                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| WILLIAM H. NYCE, B.S.<br>Licensed Professional Engineer (Pennsylvania)<br>Special Lecturer, Chemistry                                     | <i>Chemistry</i>                                    |
| JOHN J. O'DEA, B.B.A.<br>Vice President, The Colonial Bank & Trust Company                                                                | <i>Accounting</i>                                   |
| RICHARD PARENT, B.S., M.S.<br>Instructor, Trumbull High School                                                                            | <i>Chemistry</i>                                    |
| ELIZABETH H. PATTON, B.S., M.S.<br>Associate Professor                                                                                    | <i>Library</i>                                      |
| MICHAEL PERILLO, B.S., M.A.<br>Assistant Professor, Southern Connecticut State College                                                    | <i>Reading Laboratory</i>                           |
| WILLARD S. PETERSEN, B.A., M.B.A.<br>Instructor of Economics                                                                              | <i>Economics</i>                                    |
| WILLIAM PFEIFFER, B.S.<br>Technical Measurement Corporation                                                                               | <i>Business Finance</i>                             |
| PATRICIA PIERCE, B.A.                                                                                                                     | <i>Mathematics</i>                                  |
| JAMES U. PIPER, B.S., M.S., Ph.D.<br>Assistant Professor of Chemistry                                                                     | <i>Chemistry</i>                                    |
| SERBAN POPOVICI, B.E.P., M.S.E.E.<br>Instructor of Electrical Engineering                                                                 | <i>Electrical Engineering</i>                       |
| RADOMIR PROTIC, Electromechanical Engineering degree<br>Design Engineer, Nuclear Structure Laboratory, Yale University                    | <i>Electrical Engineering</i>                       |
| SALVATORE PUGLIA, B.S., M.S.                                                                                                              | <i>Chemistry</i>                                    |
| RICHARD PURVIS, B.S.<br>C. P. A., Maine<br>Ernst & Ernst                                                                                  | <i>Accounting</i>                                   |
| THE REVEREND JOHN QUINN, B.A., M.A.<br>Chairman, Psychology Department, Albertus Magnus College                                           | <i>Psychology</i>                                   |
| CHARLES E. REICHARD, B.E.E., M.E.E.<br>Licensed Professional Engineer (Conn.)<br>Supervisor of Planning, The United Illuminating Company  | <i>Electrical Engineering</i>                       |
| RICHARD REIMER, B.B.A., M.S.<br>C. P. A., Connecticut<br>Assistant Professor of Business Administration                                   | <i>Business Administration</i>                      |
| STANLEY F. REITER, B.M.E., M.Eng., D.Eng.<br>Technical Manager, Rome Fastener Corporation                                                 | <i>Metallurgical Engineering</i>                    |
| MICHAEL RETHIS, Ph.D.<br>Professor of English and Humanities and Foreign Languages                                                        | <i>English and Humanities<br/>Foreign Languages</i> |
| DAVID RICE, B.A.<br>Greater New Haven Chamber of Commerce                                                                                 | <i>Advertising</i>                                  |
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| GENE D. ROCHETTE, S.B., B.S.M.E., M.Eng.<br>Licensed Professional Engineer (Connecticut)<br>Assistant Professor of Mechanical Engineering | <i>Mechanical Engineering</i>                       |
| JAKOB ROSENTHAL, B.A., M.A., Ph.D.<br>Assistant Professor of History                                                                      | <i>History</i>                                      |
| BERTRAND ROSS, M.S.<br>Instructor of Mathematics                                                                                          | <i>Mathematics</i>                                  |
| JOHN H. SALMON, B.E.<br>Licensed Professional Engineer (Connecticut)<br>Assistant Supervisor, The United Illuminating Company             | <i>Mechanical Engineering</i>                       |
| DAVID B. SALZMAN, B.A., LL.B.<br>Attorney-at-Law                                                                                          | <i>Business Law</i>                                 |

|                                                                                                                                                  |                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| ALEXANDER SANDOMIRSKY, B.A., M.A.<br>Manager of Engineering, B. F. Goodrich Sponge Products Division                                             | <i>Mechanical Engineering</i>  |
| ERNEST SAPELLI, B.S., M.A.                                                                                                                       | <i>Psychology</i>              |
| RONALD A. SARASIN, B.S., LL.B.<br>Attorney-at-Law                                                                                                | <i>Business Law</i>            |
| SHIV L. SAWHNEY, B.A., LL.B., M.B.A.<br>Instructor of Business Administration                                                                    | <i>Business Administration</i> |
| GEORGE A. SCHAEFER, B.S., M.B.A.<br>Assistant Professor of Business Administration                                                               | <i>Marketing</i>               |
| HAROLD W. SCHAUGHENCY, A.B., A.M.<br>Associate Professor of Sociology                                                                            | <i>Sociology</i>               |
| HENRY W. SCHIESEL, B.Ch.E., D.Sc.<br>Research Division, Olin Mathieson Chemical Corporation                                                      | <i>Chemistry</i>               |
| WILLIAM F. SCHOLL, JR., B.A., B.D.<br>Instructor of English and Humanities                                                                       | <i>English and Humanities</i>  |
| SUSAN SCHULMAN, B.A.                                                                                                                             | <i>English</i>                 |
| AYRES C. SEAMAN, B.S., C.E.<br>Licensed Professional Engineer (Conn., N.Y., Mass., R.I.)<br>Chief Structural Engineer, Fletcher-Thompson Company | <i>Mechanical Engineering</i>  |
| LOUIS SELBERT, B.S., M.B.A.<br>General Manager, W. & S. Blackinton Company                                                                       | <i>Business Administration</i> |
| S. PRAKASH SETHI, M.B.A.<br>Instructor of Business Administration                                                                                | <i>Business Administration</i> |
| GENE R. SIMONS, B.S., Mgt.E., M.S.I.E.<br>Assistant Professor of Industrial Engineering                                                          | <i>Industrial Engineering</i>  |
| DAVID SLETTEN, A.S.<br>Supervisor, Liberty Mutual Insurance Company                                                                              | <i>Industrial Engineering</i>  |
| RICHARD J. SLUSAR, B.S., M.S.<br>Senior Engineer, Olin Mathieson Chemical Corporation                                                            | <i>Metallurgy</i>              |
| BRIAN F. SMITH, B.S.<br>C. P. A., Connecticut<br>Ernst & Ernst                                                                                   | <i>Accounting</i>              |
| PHILIP A. SMITH, Ph.B.                                                                                                                           | <i>Mathematics</i>             |
| SELWYN SMITH, B.S.I.E.<br>Plant Manager, U.S. Motors, Division of Emerson Corporation                                                            | <i>Industrial Engineering</i>  |
| WARREN J. SMITH, B.S., M.B.A.<br>Assistant Professor of Business Administration                                                                  | <i>Business Administration</i> |
| PAUL R. SOLOMON, B.A., LL.B.<br>Attorney-at-Law                                                                                                  | <i>Business Law</i>            |
| WILLIAM W. SPOSILI<br>Supervisor, Burroughs Corporation                                                                                          | <i>Industrial Engineering</i>  |
| DANIEL A. STEIN, B.A., M.F.A.<br>Instructor of English and Humanities                                                                            | <i>English and Humanities</i>  |
| JAMES S. STICKLES, B.A.<br>Nationwide Insurance Company                                                                                          | <i>Accounting</i>              |
| JOHN STREICKER, A.B.                                                                                                                             | <i>Accounting</i>              |
| HORATIO T. STROTHER, B.A., M.A.<br>Assistant Professor of History                                                                                | <i>History</i>                 |
| EDWARD F. SUGRUE, B.A., M.S.<br>Head of Mathematics Department, East Haven High School                                                           | <i>Mathematics</i>             |
| KANTILAL K. SURTI, B.E., M.E.E.<br>Instructor of Electrical Engineering                                                                          | <i>Electrical Engineering</i>  |

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|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| JOHN TELUK, B.S., M.S.<br>Instructor of Economics                                                                                      | <i>Economics</i>                         |
| GEORGE R. TIERNAN, B.A., LL.B.<br>State's Attorney, New Haven County                                                                   | <i>Business Law</i>                      |
| MURRAY TRACHTEN, B.S., LL.B.<br>Attorney-at-Law                                                                                        | <i>Business Law</i>                      |
| LIEN-EN TSAO, LL.B.<br>Assistant Professor of Social Studies                                                                           | <i>Social Studies</i>                    |
| PORTER H. TURNER, B.A.<br>General Secretary, YMCA                                                                                      | <i>YMCA Administration &amp; History</i> |
| BRUCE TYNDALL, B.A., M.S.<br>Associate Professor of Mathematics                                                                        | <i>Mathematics</i>                       |
| MARIO VECCHIORELLI, B.S., M.S.<br>Instructor, Amity High School                                                                        | <i>Biology</i>                           |
| FLORINDO F. VIEIRA, B.S., M.S.<br>Instructor of Physical Education                                                                     | <i>Physical Education</i>                |
| MARY VILLANO, B.S., M.A.                                                                                                               | <i>Reading Laboratory</i>                |
| HOWARD WARD, B.S.<br>Instructor, Business Department, East Haven High School                                                           | <i>Data Processing</i>                   |
| THOMAS C. WARNER, JR., B.E., M.S.<br>Licensed Professional Engineer (Conn.)<br>Professor of Mechanical Engineering                     | <i>Mechanical Engineering</i>            |
| ROGER F. WASZMER, B.E.E.<br>Sales Engineer, Dittman and Greer, Inc.                                                                    | <i>Physics</i>                           |
| JOSEF WEINSTEIN, B.A., LL.B.<br>Law partner, Sperando & Weinstein                                                                      | <i>Business Law</i>                      |
| HUGH A. WEISS, A.B., B.A., M.S., Ph.D.<br>Associate Professor of Business Administration                                               | <i>Business Administration</i>           |
| MARVIN D. WEISS, B.S., B.Ch.E., M.Ch.E.<br>Senior Research Associate, Naugatuck Chemical Division,<br>United States Rubber Corporation | <i>Electrical Engineering</i>            |
| SUSANNE WELLFORD, B.A., M.A.<br>Instructor of English and Humanities                                                                   | <i>English and Humanities</i>            |
| HANNA WESTON, B.A., M.A.                                                                                                               | <i>Economics</i>                         |
| BYRON WHITE, A.B., M.A., Ph.D.<br>Associate Professor of Economics                                                                     | <i>Economics</i>                         |
| RICHARD I. WIDEMAN, B.S.E.                                                                                                             | <i>Accounting</i>                        |
| BERNARD WIENER, B.S., M.B.A.<br>Assistant Professor of Business Administration                                                         | <i>Business Administration</i>           |
| RALPH B. WINN, A.M., Ph.D.<br>Professor of Psychology                                                                                  | <i>Psychology</i>                        |
| JOSEPH WINTER, B.M.E., M.S., D.Eng.S.<br>Licensed Professional Engineer (New York)<br>Engr. Spec., Olin Mathieson Chemical Corporation | <i>Mechanical Engineering</i>            |
| HERBERT FESSENDEN WRIGHT, A.B., M.S., Ph.D.<br>Professor of Chemistry                                                                  | <i>Chemistry</i>                         |
| WILLIAM WRIGHT, B.S., M.S.<br>Instructor, Trumbull High School                                                                         | <i>Modern Science</i>                    |
| YI YEH, B.A., M.S.<br>Instructor                                                                                                       | <i>Library</i>                           |
| HALINA J. ZILVETI, B.S., M.A.                                                                                                          | <i>Speech</i>                            |
| LOUIS C. ZOWINE, B.A., LL.B.                                                                                                           | <i>Business Law</i>                      |



1. Main Campus, 300 Orange Avenue, West Haven
2. Sraithcona Hall (Sheffield) (S), corner of Grove and Prospect Streets, N. H.
3. Homond Laboratory (H), 14 Mansfield St., N. H.
4. YMCA, 52 Howe Street, N. H.

# CALENDAR FOR 1966

## JANUARY

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 |    |    |    |    |    |

## FEBRUARY

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    | 1  | 2  | 3  | 4  |
| 5  | 6  | 7  | 8  | 9  | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 |    |    |    |    |

## MARCH

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    | 1  | 2  | 3  | 4  |
| 5  | 6  | 7  | 8  | 9  | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 |    |

## APRIL

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 |    |    |    |    |    |    |

## MAY

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 |    |    |    |    |    |

## JUNE

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 |    |    |    |    |    |    |

## JULY

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 |    |    |    |    |    |

## AUGUST

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 |    |    |    |    |    |

## SEPTEMBER

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 |    |    |    |    |    |    |

## OCTOBER

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 |    |    |    |    |    |

## NOVEMBER

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 |    |    |    |    |    |    |

## DECEMBER

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 |    |    |    |    |    |

# CALENDAR FOR 1967

## JANUARY

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 |    |    |    |    |    |

## FEBRUARY

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 |    |    |    |    |    |    |

## MARCH

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 |    |    |    |    |    |

## APRIL

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 |    |    |    |    |    |    |

## MAY

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 |    |    |    |    |    |

## JUNE

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 |    |    |    |    |    |    |

## JULY

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 |    |    |    |    |    |

## AUGUST

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 |    |    |    |    |    |

## SEPTEMBER

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 |    |    |    |    |    |    |

## OCTOBER

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 |    |    |    |    |    |

## NOVEMBER

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 |    |    |    |    |    |    |

## DECEMBER

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 |    |    |    |    |    |



